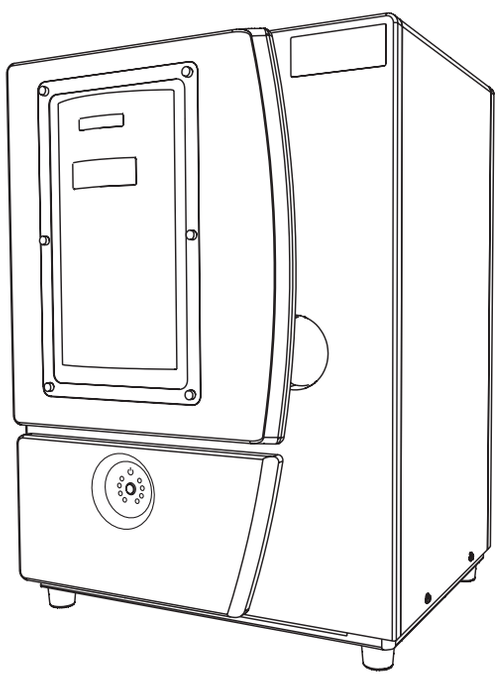
Roland

PICZA

3D LASER SCANNER LPX-1200

LPX-1200
User's Manual



Thank you very much for purchasing this product.

- To ensure correct and safe usage with a full understanding of this product's performance, please be sure to read through this manual completely and store it in a safe location.
- Unauthorized copying or transferral of this manual, in whole or in part, is prohibited.
- The contents of this operation manual and the specifications of this product are subject to change without notice.
- The operation manual and the product have been prepared and tested as much as possible. If you find any misprint or error, please inform us.
- Roland DG Corp. assumes no responsibility for any direct or indirect loss or damage which may occur through use of this product, regardless of any failure to perform on the part of this product.
- Roland DG Corp. assumes no responsibility for any direct or indirect loss or damage which may occur with respect to any article made using this product.

Roland DG Corporation

For the USA

FEDERAL COMMUNICATIONS COMMISSION RADIO FREQUENCY INTERFERENCE STATEMENT

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules.
These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.
This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.
Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Unauthorized changes or modification to this system can void the users authority to operate this equipment.

The I/O cables between this equipment and the computing device must be shielded.

For Canada

CLASS A NOTICE

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

CLASSE A AVIS

Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

For California

WARNING
This product contains chemicals known to cause cancer, birth defects and other reproductive harm, including lead.

For EU Countries

CE

Manufacturer:
ROLAND DG CORPORATION
1-6-4 Shinmiyakoda, Kita-ku, Hamamatsu-shi, Shizuoka-ken, 431-2103 JAPAN

The authorized representative in the EU:
Roland DG Corporation, German Office Halskestr.7, 47877 Willich,Germany

This system (including the housing and safety device) is a Class 1 laser product.

Laser specifications of this system (including the housing)
Wavelength: 645 to 660 nm, maximum output: less than 0.39 μW

Complied with IEC/EN Publication 60825-1, Amendment 2, 2001.
Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No.50, dated July 26, 2001.

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in radiation exposure.

For EU Countries

WARNING
This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Roland DG Corp. has licensed the MMP technology from the TPL Group.

⚠ To Ensure Safe Use

Be sure to read this chapter before use. It contains important notes for using this machine safely. Be sure to observe the notes when using the machine.

About ⚠WARNING and ⚠CAUTION Notices

⚠WARNING	Used for instructions intended to alert the user to the risk of death or severe injury should the unit be used improperly.
⚠CAUTION	Used for instructions intended to alert the user to the risk of injury or material damage should the unit be used improperly. * Material damage refers to damage or other adverse effects caused with respect to the home and all its furnishings, as well to domestic animals or pets.

About the Symbols

	The ⃠ symbol alerts the user to items that must never be carried out (are forbidden). The specific thing that must not be done is indicated by the design contained within the circle. The symbol at left means the unit must never be disassembled.
	The ● symbol alerts the user to things that must be carried out. The specific thing that must be done is indicated by the design contained within the circle. The symbol at left means the power-cord plug must be unplugged from the outlet.

⚠WARNING

About the Power Supply

Do not use with any electrical power supply that does not meet the ratings displayed on the AC adapter.
Use with any other power supply may lead to fire or electrocution.

Do not use with any power supply other than the dedicated AC adapter.
Use with any other power supply may lead to fire or electrocution.

Use only with the power cord included with this product.
Use with other than the included power cord may lead to fire or electrocution.

⚠WARNING

Operation and Handling

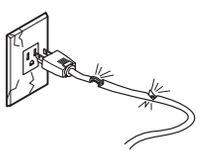
Do not disassemble, repair, or modify.
Doing so may lead to fire or abnormal operation resulting in injury.

Do not use while in an abnormal state (i.e., emitting smoke, burning odor, unusual noise, or the like).
Doing so may result in fire or electrocution.
Immediately unplug the power-cord plug from the electrical outlet, and contact your authorized Roland DG Corp. dealer.

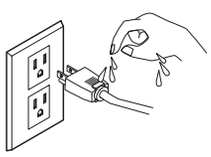
⚠CAUTION

About the Power Supply

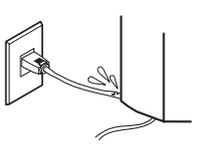
Do not use with a damaged AC adapter, power cord, or power-cord plug, or with a loose electrical outlet.
Doing so may lead to fire, electrical shock, or electrocution.



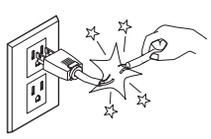
Do not attempt to unplug the power-cord plug with wet hands.
Doing so may result in electrical shock or electrocution.



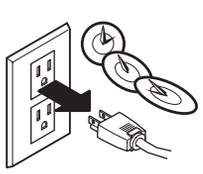
Do not damage or modify the electrical power cord, subject it to excessive bending, twisting, pulling, binding, or pinching, or place any object or weight on it.
Doing so may damage the electrical power cord, leading to fire, electrical shock, or electrocution.



When unplugging the electrical power cord from the power outlet, grasp the plug, not the cord.
Unplugging by pulling the cord may damage it, leading to fire, electrical shock, or electrocution.



When not in use for several hours, unplug the power-cord plug from the electrical outlet.
Failure to do so may result in danger of electrical shock, electrocution, or fire due to deterioration of electrical insulation.



⚠CAUTION

Operation and Handling

Lifting and carrying are operations that must be carried out by two persons, by grasping the bottom of the machine.
Failing to do so may result in injury.

Securely fasten the object to be scanned to the table so that it does not slip or topple over.
The table rotates during scanning. Tipover or contact by the scan object may cause damage. Scan-object damage is not covered by warranty.

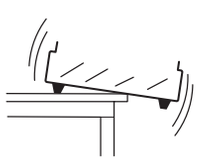
Do not use if the housing or window area is cracked or deformed.
In such cases, there is danger of external emission of Class 3R laser light. Staring at externally emitted laser light may cause eye injury.

Do not insert metal objects, flammable objects, or any other foreign object into interior areas other than the top of the table. Also, do not place water or other liquids on any area, including the table.
Doing so may cause fire.

Never try to scan an object whose height is 206.3 mm or more, or that protrudes beyond the table.
The object may strike the interior of the machine, causing breakdown or damage. The scan object may also be damaged. Scan-object damage is not covered by warranty.

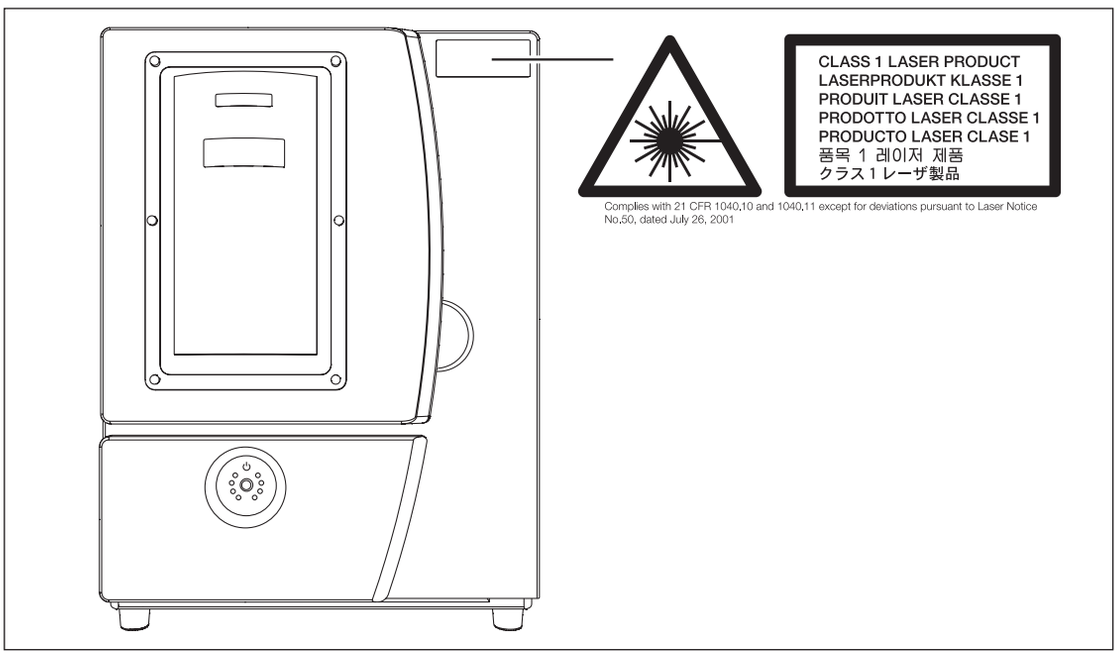
About the Installation Site

Install on a stable surface.
Failure to do so may result in the unit tipping over, leading to injury.

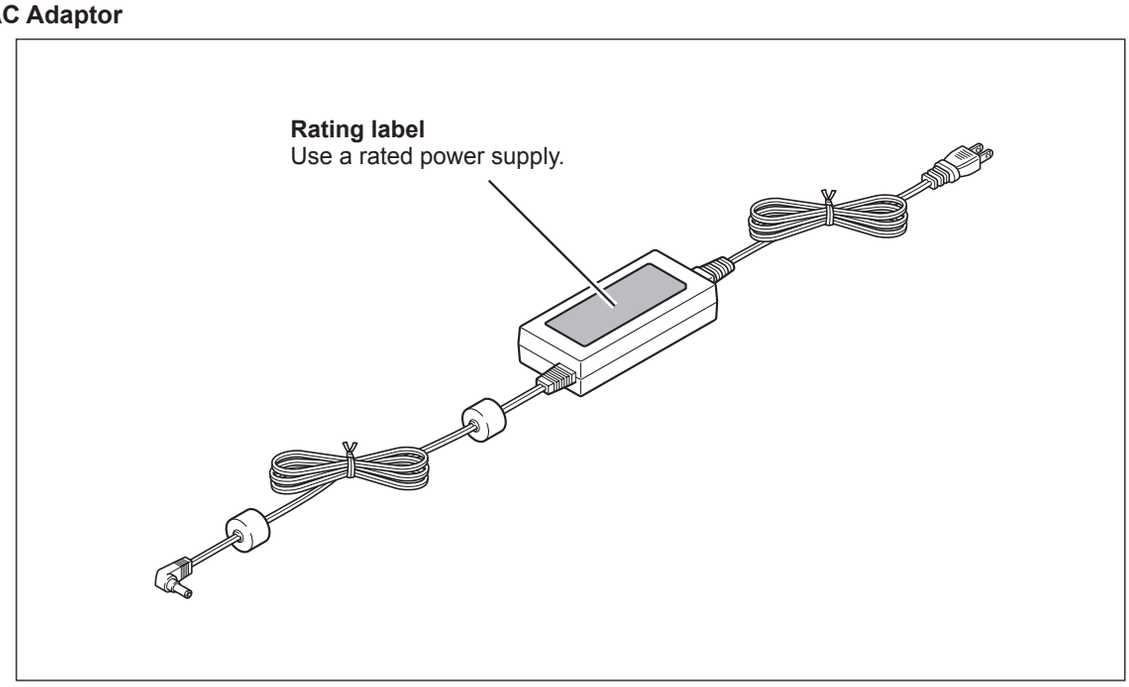


About the Labels Affixed to the AC Adaptor and Unit

Front


CLASS 1 LASER PRODUCT
LASERPRODUKT KLASSE 1
PRODUIT LASER CLASSE 1
PRODOTTO LASER CLASSE 1
PRODUCTO LASER CLASE 1
품목 1 레이저 제품
クラス 1 レーザ製品
Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No.50, dated July 26, 2001

AC Adaptor



In addition to these symbols, the symbol shown below is also used.

Point : Indicates a handy tip or advice regarding use.

Usage Cautions

About the Installation Site

Use the machine in an operating environment that meets the following conditions.

Temperature: 10 to 40ºC (50 to 104ºF) [25ºC (77ºF) or more recommended]
Humidity: 35 to 80% (no condensation)

Never use the machine in any of the following situations.

- Places with excessive humidity or dust.
- Places subject to high temperature.
- Places with excessive vibration.
- Places with electrical noise.
- Places with poor heat dissipation.

Operation and Handling

- Be sure to remove the head retainer before use.
  Failure to remove it may cause breakdown.
- Never subject the machine to impact during a scanning operation.
  Doing so may cause scanning noise.
- Except in an emergency, never open the machine's door during a scanning operation.
  Doing so switches off the power, and scanning operation cannot be resumed.
- Never touch any internal component except the table.
  Doing so may make scanning impossible.
- Connect the AC adapter and USB cable securely so that they do not come loose or experience faulty connection during use.
  Failure to do so may make scanning impossible.
- Use a shielded USB cable having a length of three meters or less. Never use a USB hub or the like.
  Failure to do so may make scanning impossible.

Important Cautions Regarding Laser Light

This machine uses a laser beam to scan objects, but dangerous laser radiation is not emitted outside the machine. It is safe to view the laser light through the window.
However, this may not be the case if the machine is disassembled or if its cover or safety devices are broken or disabled. Please observe the cautionary notes in this documentation and never attempt to use this machine if the machine is in an abnormal state.
Direct contact with the laser beam will not cause burns or fire due to incorrect use or the like. The natural blink reflex protects the eye in the event that laser light from the machine directly enters the eye, but staring directly into the laser beam may result in eye injury.

Items That may Not Be Copied

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Table of Contents

⚠ **To Ensure Safe Use** 1

About the Power Supply 1

Usage Cautions 4

Table of Contents 5

What Is the LPX-1200? 7

Features 7

Scanning System 7

About the Documentation 8

Names and Functions 9

About the Indicator Lights 10

1. Preparing the Machine 11

1-1 Checking Accessories 12

1-2 Installing 13

Installation Environment 13

Removing the Protective Material 14

Connecting the Power Cable 15

1-3 Installing and Setting Up the Software 16

Installing the Driver 16

What to Do If Installation Is Impossible 22

Installing the Programs 24

Making the Settings for Using Dr.PICZA3 25

2. Creating 3D Data 27

2-1 Task Flow 28

2-2 Mounting the Scan Object 29

Preparing the Scan Object 29

Mounting the Scan Object 31

2-3 Performing Scanning 32

Basic Scanning 32

Checking the Scanning Results 35

2-4 Finishing the Data 36

Selecting and Scanning a Specific Area 36

Creating New Polygons 40

2-5 Saving and Exporting Data 41

Saving Data 41

Exporting Data 41

3. Editing Scanning Results - Using 3D Editor 43

3-1 What You Can Do Using 3D Editor 44
3-2 Importing and Exporting Data 45
Importing Scanning Results Immediately 45
Importing and Exporting 45
Importing More Than One Set of Data 45
3-3 Basic Operations for Objects 46
How to View the 3D Editor Window 46
Let's Try Editing Data with 3D Editor 47

4. What to Do If... 51

4-1 What to Do If... 52
The machine doesn't run. 52
Scanning is impossible. 52
Other Symptoms 52
4-2 When Moving the Machine 53

5. Appendix 55

5-1 Specifications 56
Machine Specifications 56
System Requirements for the Software 56
System Requirements for USB Connection 56
5-2 Table Dimensional Drawing 57

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What Is the LPX-1200?

Features

The LPX-1200 is a three-dimensional (3D) scanner that uses a noncontacting laser method to scan the shape of solid objects.

Noncontacting Laser System for Fast, Dependable Scanning

You can perform scanning without contact with the scan object, using a laser beam. This enables high-speed scanning without the worry of damage to the object.

Support for Two Scanning Modes

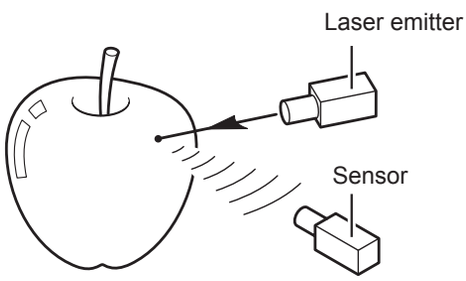
Using the included Dr. PICZA3 program lets you perform scanning in either of two modes: plane scan or rotary scan. You can choose the scanning mode that matches the shape of the scan object. By combining the two modes, you can even scan objects with complex shapes.

A Wide Array of Scanning Functions

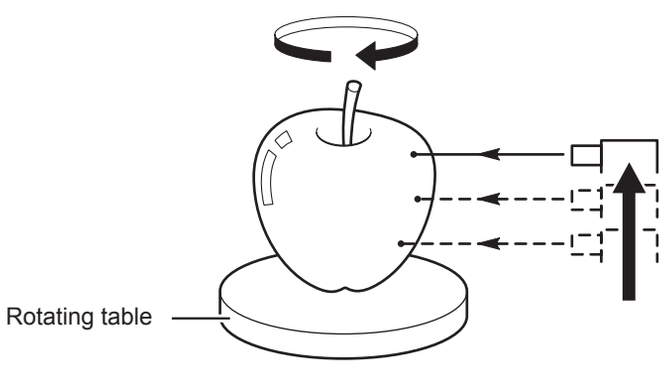
In addition to the two basic scanning modes, line-segment and point scanning functions are also supported. By using Dr. PICZA3, you can extract the data for just the characteristic line segments (such as contour lines) and points of an object. Using this as auxiliary data for three-dimensional modeling operations using CAD or computer-graphics programs makes it possible to reduce the time and effort of modeling operations.

Scanning System

The LPX-1200 scans objects using laser light. It emits a spot beam onto the scan object and detects reflected light from the object with sensors.



It performs scanning as it rotates the scan object and moves the laser beam from bottom to top.



About the Documentation

This machine comes with the following documentation.

User's Manual (this document)

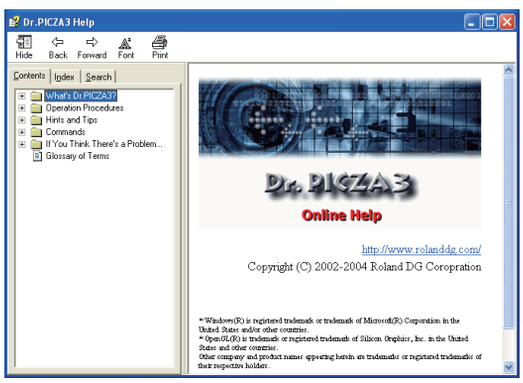
Read this first. It contains important notes and cautions on usage, as well describing scanning methods, what to do in the event of a problem, and other information.

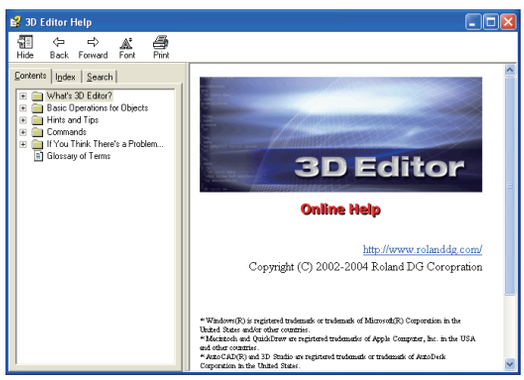
Dr.PICZA3 Online Help
3D Editor Online Help

You view this documentation on your computer screen. Installing the program enables you to view the documentation.

☞ See "1-3 Installing and Setting Up the Software."

It provides detailed descriptions of the commands you use for each of the programs.

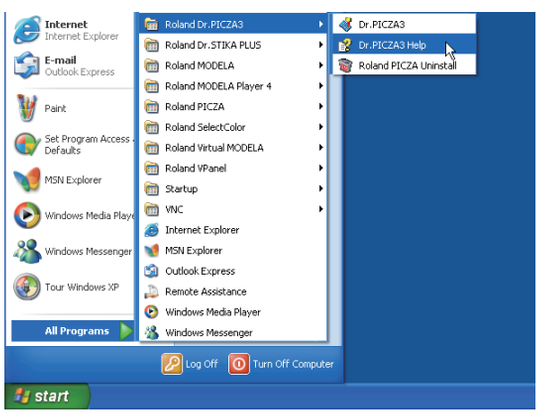




You can use either of two methods to view the documentation.

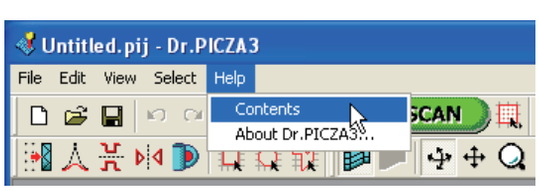
- **From the [Start] Menu in Windows**

From the [Start] menu, choose [All programs (or Programs)], then [Roland Dr.PICZA3 (Roland 3D Editor)], then [Dr.PICZA3 (3D Editor) Help].



- **Clicking the Help Menu in the Program**

From the [Help] menu, click [Contents].



Names and Functions

Front

Door
When performing scanning, be sure to close this. The power cannot be switched on while the door is open. Opening the door while the power is on switches off the machine.

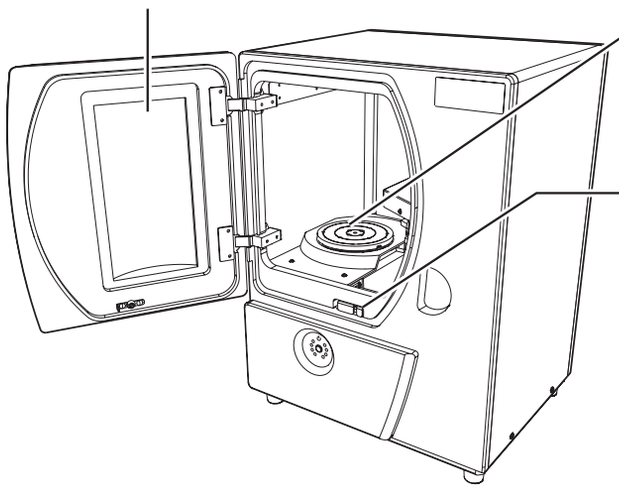
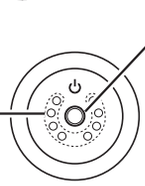


Table
This is the base where you place objects to be scanned. It rotates during scanning.
Never touch any internal area other than the table.

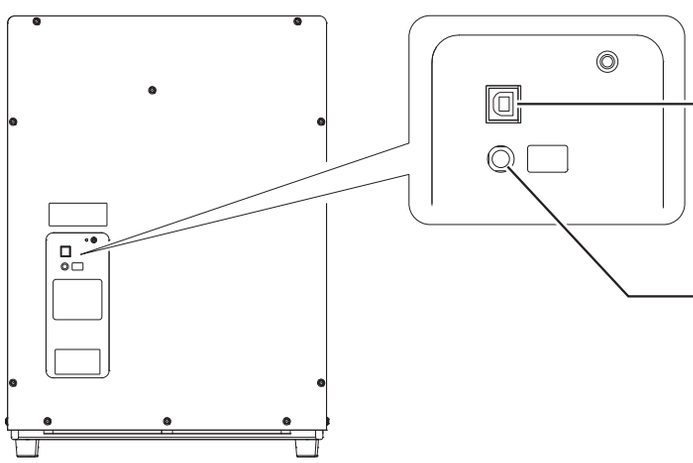
Interlock switch
This is one of the safety devices. Never insert any objects here. Doing so may keep the door open and prevent the safety devices from working properly.



Power button
This switches the power on and off. To switch on the power, you press this button. To switch off the power, you hold it down for one second or longer. The color of the light indicates the status of the machine.

Movement lights
These are arranged in a ring around the power button. They flash when the machine is performing some operation.

Rear



USB connector
This connects the included USB cable.

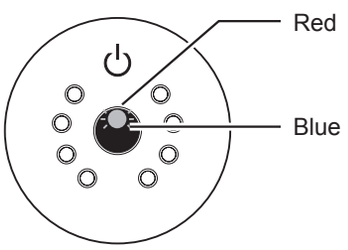
AC adapter jack
This connects the AC adapter.

About the Indicator Lights

The lighted state of the power button and the movement lights tells you the status of the LPX-1200.

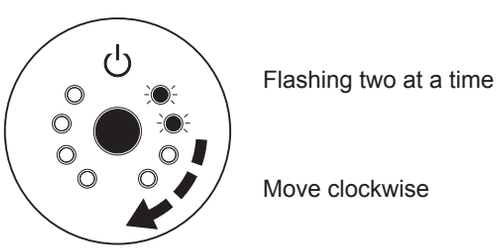
Indicator lights		The status of the LPX-1200
Power button	Movement lights	
Dark	Dark	The power is off.
Lit (blue)	Flashing two at a time	Initialization is in progress.
Lit (blue)	Dark	Scanning is possible.
Lit (blue)	Flashing one at a time	Scanning is in progress.
Lit or flashing (blue and red) (*) Lit or flashing (red)	Dark	An error has occurred. ☞ See "4-1 What to Do If...."

(*)Illumination pattern (blue and red)

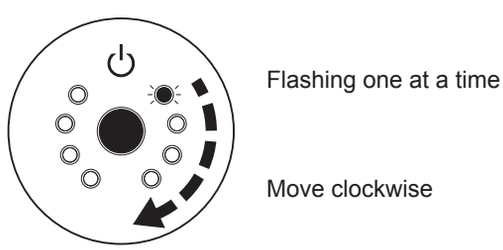


Status Indicated by the Movement Lights

These light up blue and move clockwise two at a time during initialization at power up, and one at a time during scanning.



Initialization



Scanning

Point

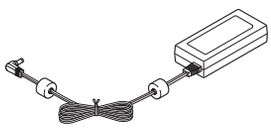
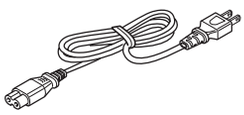
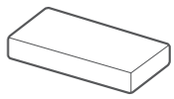
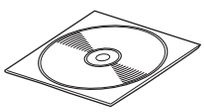
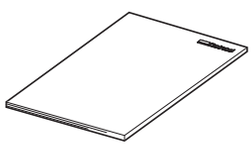
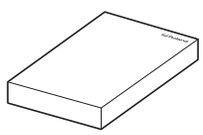
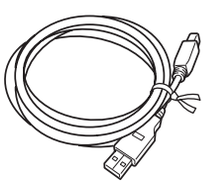
When you open or close the door after connecting the power cable to the machine, the power button and movement lights flash momentarily, but this is normal and does not indicate a problem.

1. Preparing the Machine

This section describes what to do when you first open the packing, including how to connect the machine to a computer and install the programs and the like.

1-1 Checking Accessories

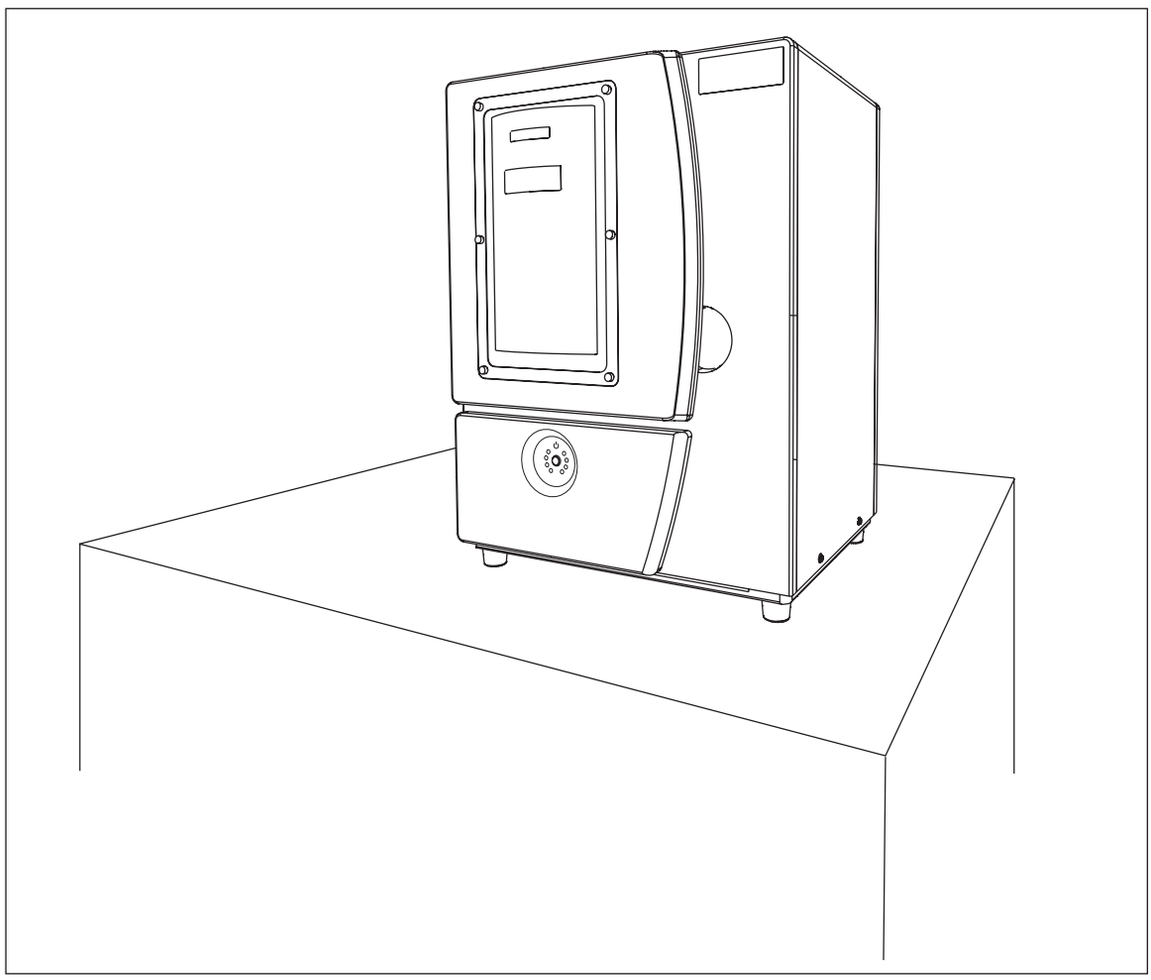
The following items are packed with the machine. Make sure they are all present and accounted for.

 AC adaptor: 1	 Power cord: 1	 Clay: 1
 CD-ROM: 1	 User's Manual: 1	 Roland LPX EZ Studio : 1
 USB cable: 1		

1-2 Installing

Installation Environment

Place in a level, stable location.

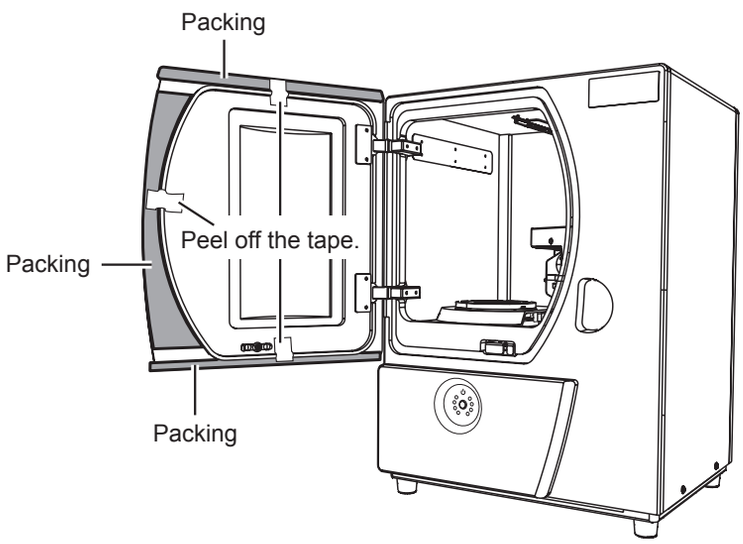


Removing the Protective Material

Open the door and remove the protective material.

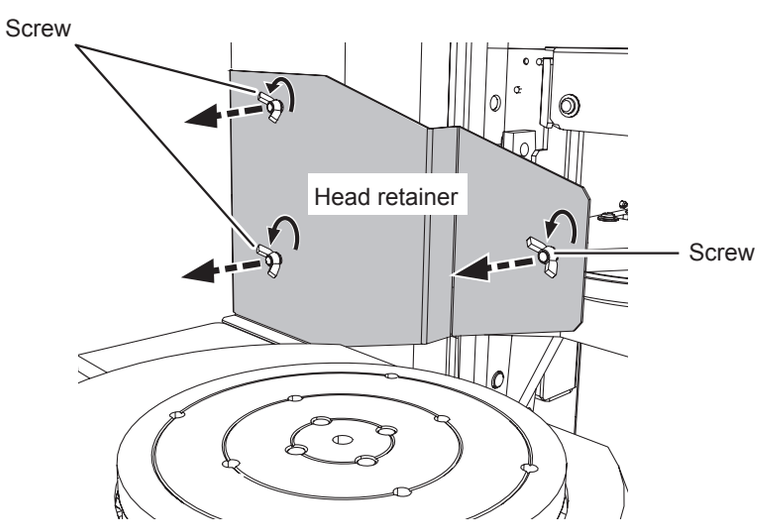
Back of the door

Peel off the tape and remove the packing.



Inside the door

Remove the head retainer. Unscrew the screws by hand.

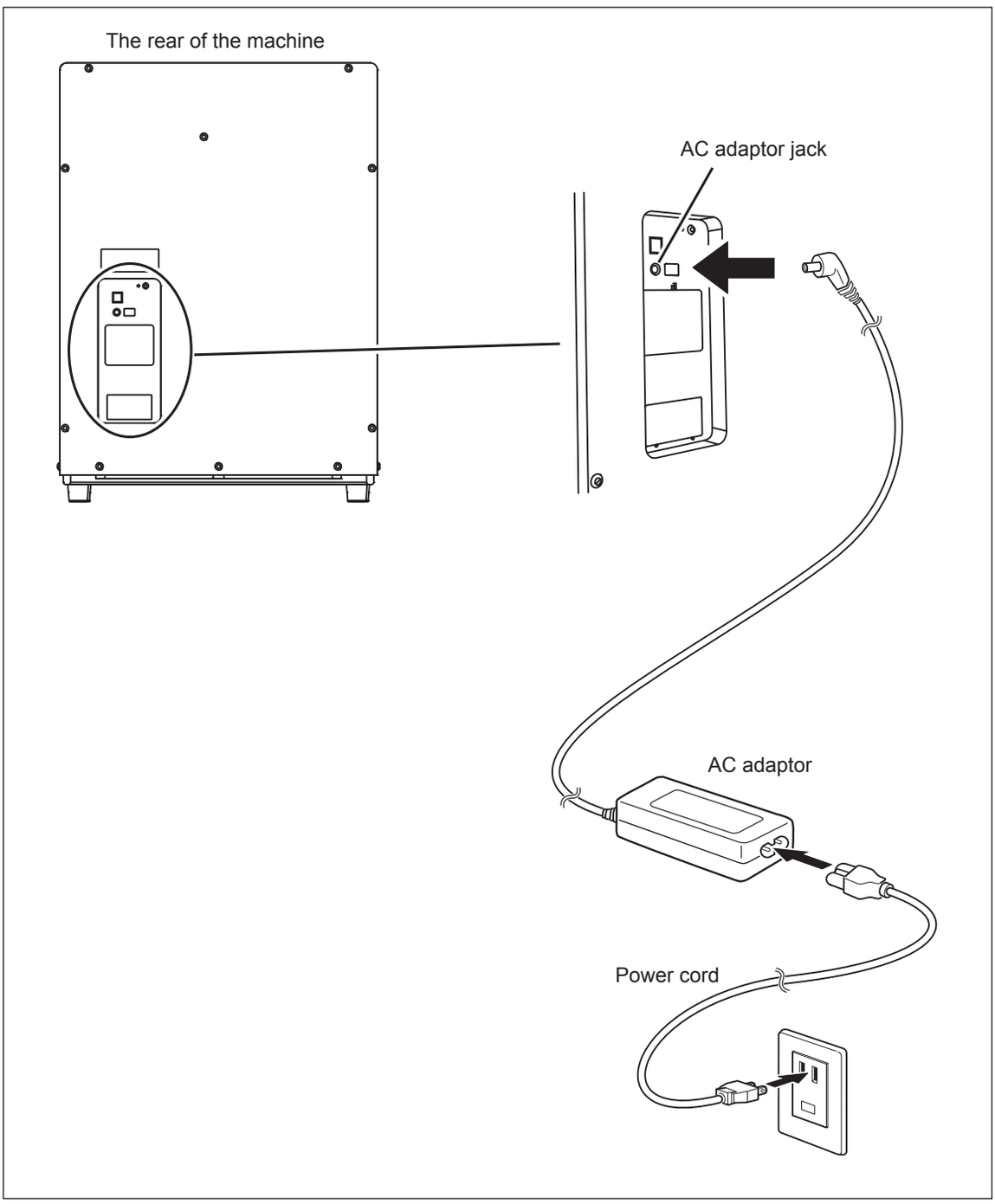


Never touch or try to move and internal equipment other than the head retainer and the screws.
The head retainer and packing will be needed if you must repackage the product. Please do not throw them away.

☞ See "4-2 When Moving the Machine."

Connecting the Power Cable

Connect the power cord and the AC adapter.



Point

When you connect the power cable to the machine, the power button and movement lights flash momentarily, but this is normal and does not indicate a problem.

1-3 Installing and Setting Up the Software

Here you connect the machine to your computer and install and set up the included software on the computer, enabling you to perform scanning with the machine.

Installing the Driver

Connect the machine to the computer and install the driver.
Be sure to follow this procedure to install the driver. Failure to do so may make installation impossible.

☞ Go to "1-3 Installing and Setting Up the Software," see "What to Do If Installation Is Impossible."

Procedure

Windows XP

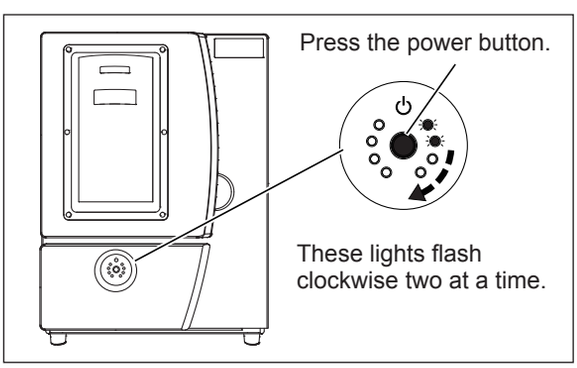
❶ Start Windows and log on as "Administrator."

❷

Roland Software Package
Roland
Roland Software Package
for PICZA, MODELA, CAMM-2, CAMM-3
Click here.
Install
Step 1
Click the drop-down arrow for [Click here.] and choose the model name.
Step 2
Click [Install].
To view the description of a program, click the [i] button.
When a checkbox is not selected, setup is not performed for the corresponding program.
Go to Roland DG Corporation Homepage

Insert the Roland Software Package CD-ROM into the CD-ROM drive.
The setup menu appears automatically.

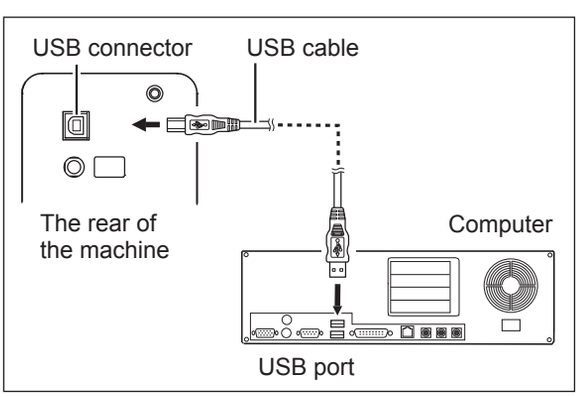
❸



Switch on the machine.
Wait a short while until the lights stop flashing.
The flashing continues for about one minute.

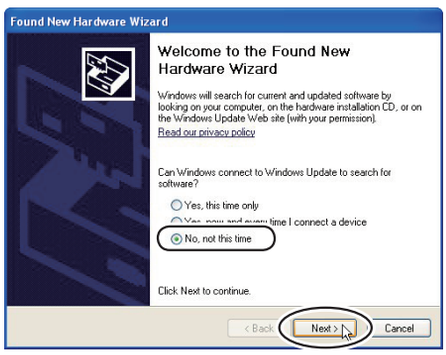
From this point on, keep the machine's door closed until installation ends. Failure to do so switches off the power, which may prevent installation from completing correctly.

❹



Connect the included USB cable.
The [Found New Hardware Wizard] dialog appears.

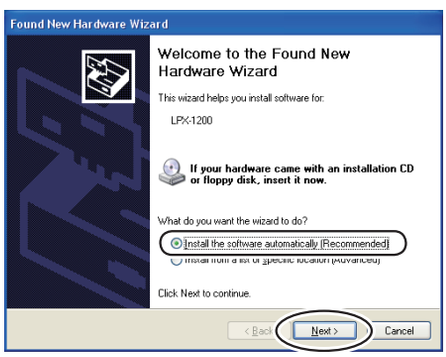
❺


Found New Hardware Wizard
Welcome to the Found New Hardware Wizard
Windows will search for current and updated software by looking on your computer, on the hardware installation CD, or on the Windows Update Web site (with your permission).
Read our privacy policy
Can Windows connect to Windows Update to search for software?
Yes, this time only
No, not this time
Click Next to continue.
< Back
Next >
Cancel

When the window shown in the figure appears, select [No, not this time], then click [Next].

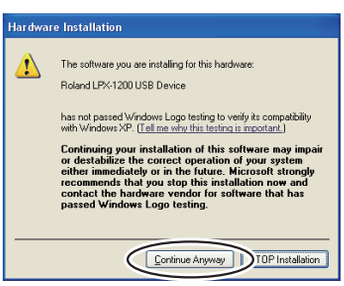
If the window in step 6 appears instead of this window, continue with installation and setup.

❻


Found New Hardware Wizard
Welcome to the Found New Hardware Wizard
This wizard helps you install software for:
LPX-1200
If your hardware came with an installation CD or floppy disk, insert it now.
What do you want the wizard to do?
Install the software automatically (Recommended)
Click Next to continue.
< Back
Next >
Cancel

Select [Install the software automatically], then click [Next].

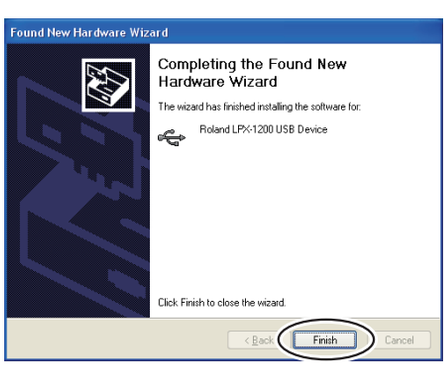
❼


Hardware Installation
The software you are installing for this hardware:
Roland LPX-1200 USB Device
has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)
Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.
Continue Anyway
STOP Installation

When this dialog box appears, click [Continue Anyway].

Installation starts automatically.

❽


Found New Hardware Wizard
Completing the Found New Hardware Wizard
The wizard has finished installing the software for:
Roland LPX-1200 USB Device
Click Finish to close the wizard.
< Back
Finish
Cancel

Click [Finish].

The [Welcome to the Found New Hardware Wizard] dialog box appears.

❾ Carry out steps ❺ through ❽ again.

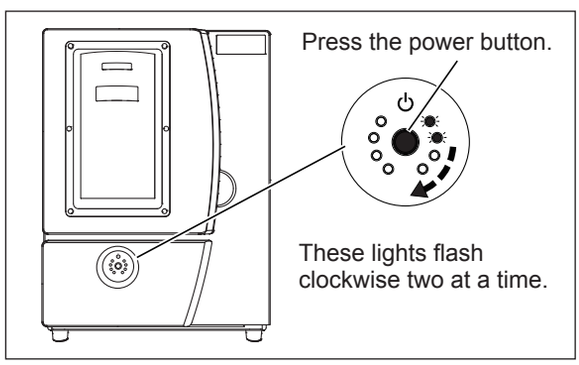
This completes the installation of the driver.

Windows 2000

1. Start Windows and log on as "Administrator."

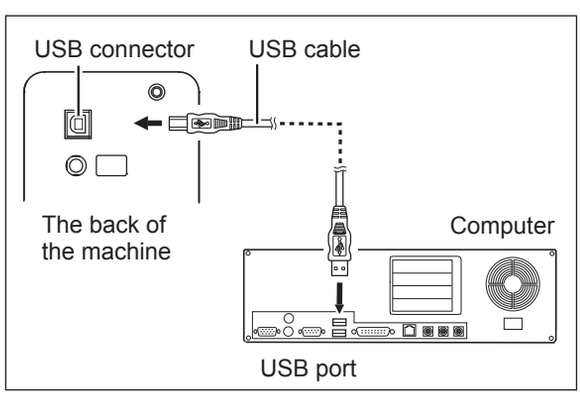
2.
Roland Software Package
Roland
Roland Software Package
for PICZA, MODELA, CAMM-2, CAMM-3
Click here.
Install
Step 1
Click the drop-down arrow for [Click here.] and choose the model name.
Step 2
Click [Install].
To view the description of a program, click the [i] button.
When a checkbox is not selected, setup is not performed for the corresponding program.
Go to Roland DG Corporation Homepage

   Insert the Roland Software Package CD-ROM into the CD-ROM drive.
   The setup menu appears automatically.

3. 

   Switch on the machine.
   Wait a short while until the lights stop flashing.
   The flashing continues for about one minute.

   From this point on, keep the door closed until installation ends. Failure to do so switches off the power, which may prevent installation from completing correctly.

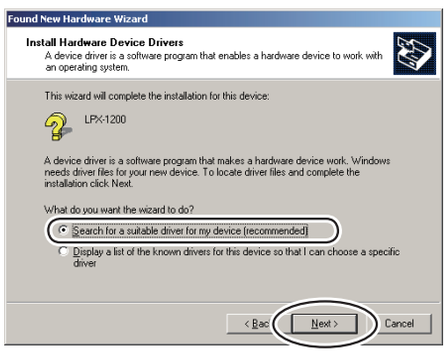
4. 

   Connect the included USB cable.
   The [Found New Hardware Wizard] dialog appears.

5.
Found New Hardware Wizard
Welcome to the Found New Hardware Wizard
This wizard helps you install a device driver for a hardware device.
To continue, click Next.
< Back
Next >
Cancel

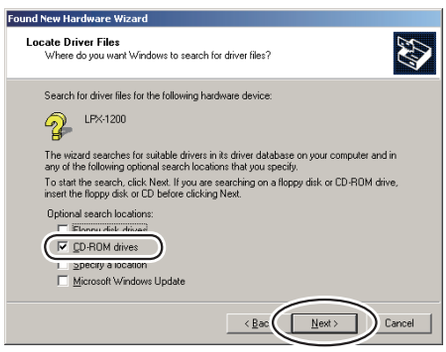
   Click [Next].

❻


Found New Hardware Wizard
Install Hardware Device Drivers
A device driver is a software program that enables a hardware device to work with an operating system.
This wizard will complete the installation for this device:
LPX-1200
A device driver is a software program that makes a hardware device work. Windows needs driver files for your new device. To locate driver files and complete the installation click Next.
What do you want the wizard to do?
Search for a suitable driver for my device (recommended)
Display a list of the known drivers for this device so that I can choose a specific driver
< Bac
Next >
Cancel

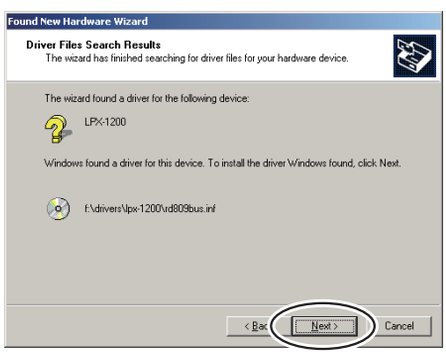
Select [Search for a suitable driver for my device], then click [Next].

❼


Found New Hardware Wizard
Locate Driver Files
Where do you want Windows to search for driver files?
Search for driver files for the following hardware device:
LPX-1200
The wizard searches for suitable drivers in its driver database on your computer and in any of the following optional search locations that you specify.
To start the search, click Next. If you are searching on a floppy disk or CD-ROM drive, insert the floppy disk or CD before clicking Next.
Optional search locations:
CD-ROM drives
Microsoft Windows Update
< Bac
Next >
Cancel

Select the [CD-ROM drives] check box, then click [Next].

❽


Found New Hardware Wizard
Driver Files Search Results
The wizard has finished searching for driver files for your hardware device.
The wizard found a driver for the following device:
LPX-1200
Windows found a driver for this device. To install the driver Windows found, click Next.
f:\drivers\lpx-1200\vd809bus.inf
< Bac
Next >
Cancel

Click [Next].

Installation starts automatically.

❾

Found New Hardware Wizard
Completing the Found New Hardware Wizard
Roland LPX-1200 USB Device
Windows has finished installing the software for this device.
To close this wizard, click Finish.
< Bac
Finish
Cancel

Click [Finish].

The [Welcome to the Found New Hardware Wizard] dialog appears.

❿ Carry out steps ❺ through ❾ again.

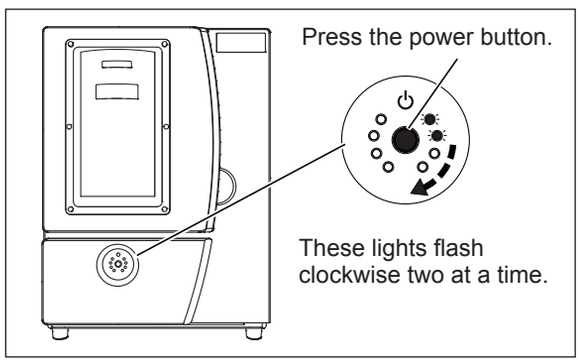
This completes the installation of the driver.

Windows Me/98

1. Start Windows.

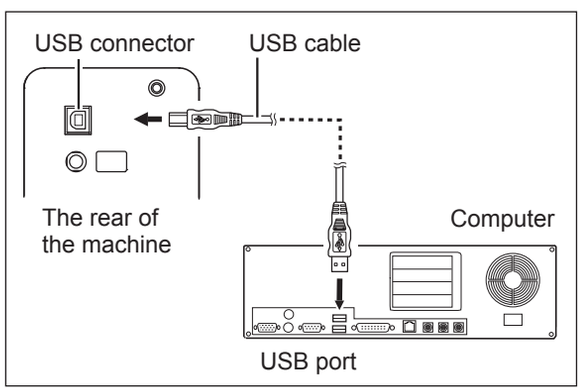
2.
Roland Software Package
Roland Software Package
for PICZA, MODELA, CAMM-2, CAMM-3
Click here.
Install
Step 1
Click the drop-down arrow for [Click here.] and choose the model name.
Step 2
Click [Install].
To view the description of a program, click the [] button.
When a checkbox is not selected, setup is not performed for the corresponding program.
Go to Roland DG Corporation Homepage

   Insert the Roland Software Package CD-ROM into the CD-ROM drive.
   The setup menu appears automatically.

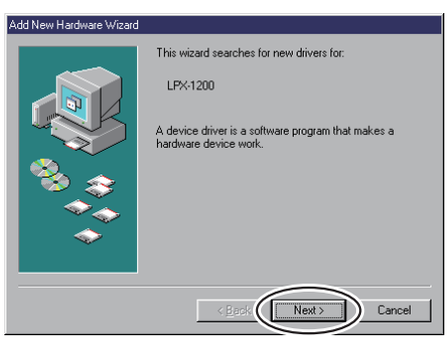
3. 

   Switch on the machine.
   Wait a short while until the lights stop flashing.
   The flashing continues for about one minute.

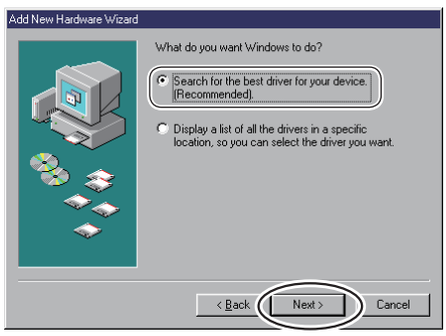
   From this point on, keep the door closed until installation ends. Failure to do so switches off the power, which may prevent installation from completing correctly.

4. 

   Connect the included USB cable.
   The [Add New Hardware Wizard] dialog appears.

5. 
Add New Hardware Wizard
This wizard searches for new drivers for:
LPX-1200
A device driver is a software program that makes a hardware device work.
< Back
Next >
Cancel

   Click [Next].

6 
Add New Hardware Wizard
What do you want Windows to do?
Search for the best driver for your device. (Recommended).
Display a list of all the drivers in a specific location, so you can select the driver you want.
< Back
Next >
Cancel

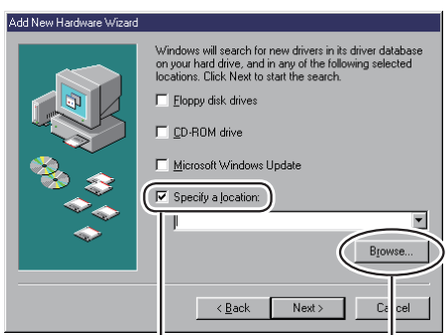
Choose [Search for the best driver for your device], then click [Next].

7 ➢ Windows Me

Installation of the driver starts automatically.

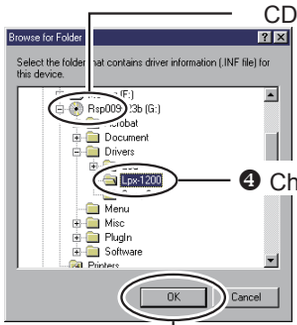
➢ Windows 98

Choose the folder on the Roland Software Package CD-ROM to search the driver.


Add New Hardware Wizard
Windows will search for new drivers in its driver database on your hard drive, and in any of the following selected locations. Click Next to start the search.
Floppy disk drives
CD-ROM drive
Microsoft Windows Update
Specify a location:
Browse...
< Back
Next >
Cancel

❶ Select [Specify a location].

❷ Click the button.

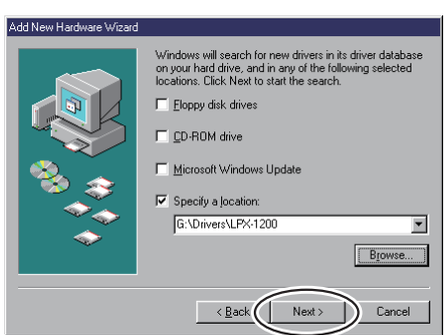


❸ Double-click on your CD-ROM drive.

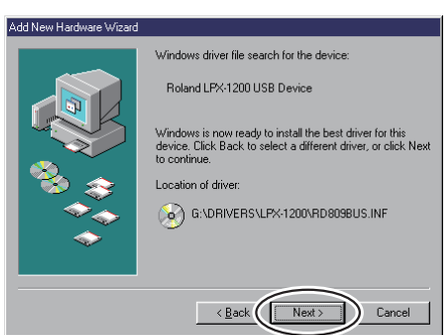
❹ Choose [\Drivers\LPX-1200].

❺ Click [OK].

8 Execute installation of the driver.


Add New Hardware Wizard
Windows will search for new drivers in its driver database on your hard drive, and in any of the following selected locations. Click Next to start the search.
Floppy disk drives
CD-ROM drive
Microsoft Windows Update
Specify a location:
G:\Drivers\LPX-1200
Browse...
< Back
Next >
Cancel

Click [Next].


Add New Hardware Wizard
Windows driver file search for the device:
Roland LPX-1200 USB Device
Windows is now ready to install the best driver for this device. Click Back to select a different driver, or click Next to continue.
Location of driver:
G:\DRIVERS\LPX-1200\RD809BUS.INF
< Back
Next >
Cancel

Clicking this button starts installing.

9
Add New Hardware Wizard
Roland LPX-1200 USB Device
Windows has finished installing the software that your new hardware device requires.
< Back
Finish
Cancel

Click [Finish].

Installation is executed automatically.

This completes the installation of the driver.

What to Do If Installation Is Impossible

If installation quits partway through, or if the wizard does not appear when you connect the USB cable, take action as follows.

Procedure

1. If the [Found New Hardware Wizard] dialog appears, click [Finish] to close it.

2. Display [Add or Remove Programs] (or [Add/Remove Programs]).

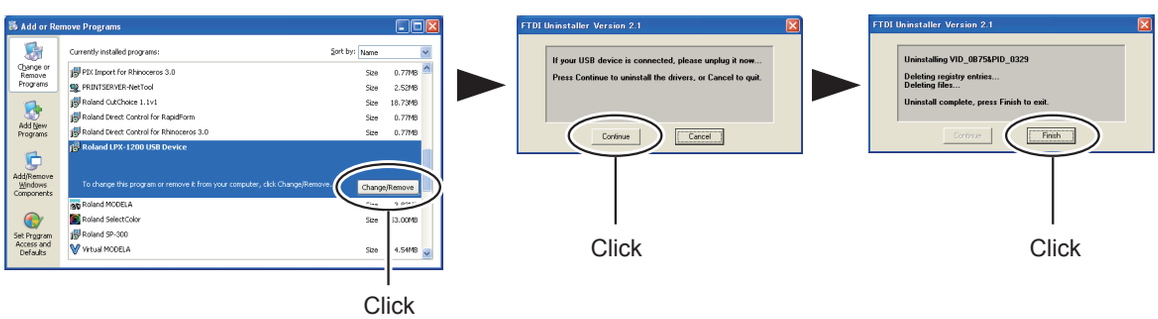
   ➢ Windows XP

   From the [Start] menu, choose [Control Panel], then click [Add or Remove Programs].

   ➢ Windows 2000/Me/98

   From the [Start] menu, choose [Settings], then [Control Panel], then click [Add/Remove Programs].

3. Uninstall [Roland LPX-1200 USB Device].



4. Detach the USB cable connected to the printer.

5. Restart Windows.

6. Follow the procedure in "Installing the Driver" to redo installation from the beginning.

   If [Roland LPX-1200 USB Device] does not appear in the list, follow the steps below.

If [Roland LPX-1200 USB Device] does not appear in the list, follow the steps below.

1. Display [System Properties].

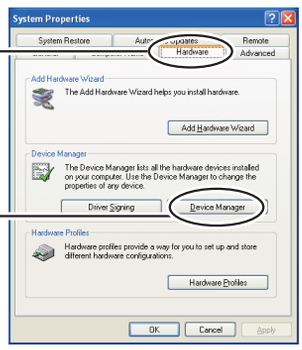
   ➢ Windows XP

   Click the [Start] menu, then right-click [My Computer]. Click [Properties].

   ➢ Windows 2000/Me/98

   Right-click [My Computer] on the desktop. Click [Properties].

❷


❶ Click the tab.
❷ Click the button.
System Properties
System Restore
Hardware
Remote
Advanced
Add Hardware Wizard
The Add Hardware Wizard helps you install hardware.
Add Hardware Wizard
Device Manager
The Device Manager lists all the hardware devices installed on your computer. Use the Device Manager to change the properties of any device.
Driver Signing
Device Manager
Hardware Profiles
Hardware profiles provide a way for you to set up and store different hardware configurations.
Hardware Profiles
OK
Cancel
Apply

Display [Device Manager].

➢ Windows XP/2000

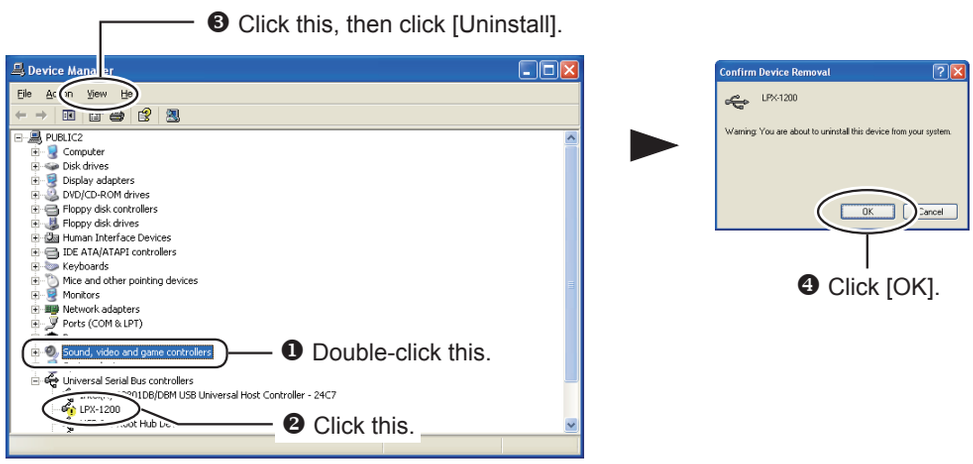
Click the [Hardware] tab, then click [Device Manager].

➢ Windows Me/98

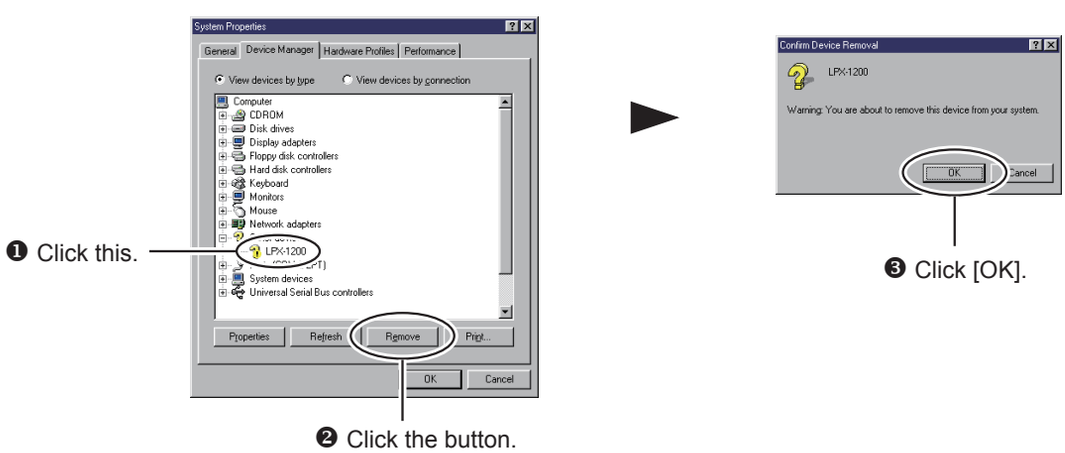
Click [Device Manager].

❸ Delete [LPX-1200].

➢ Windows XP/2000



➢ Windows Me/98



❹ Close the [Device Manager] dialog and click [OK].

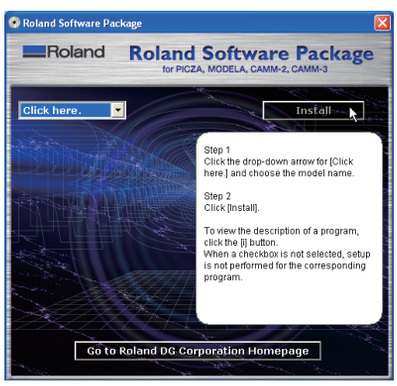
❺ Follow steps ❹ through ❻ on the previous page to redo installation from the beginning.

Installing the Programs

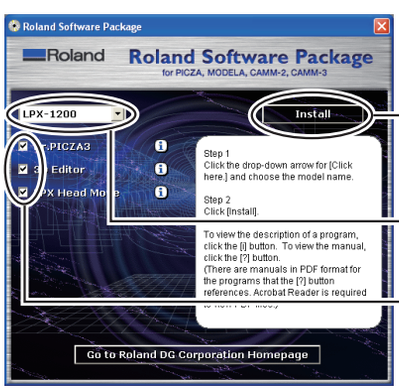
Install the following programs.

Dr.PICZA3	This program enables you to perform scanning using the machine.
3D Editor	This program enables you to edit scanned 3D data.
LPX Head Move	This program enables you to move the head to a fixed position when repacking the machine.

Procedure

1. 
Roland Software Package
Roland
Roland Software Package
for PICZA, MODELA, CAMM-2, CAMM-3
Click here.
Install
Step 1
Click the drop-down arrow for [Click here.] and choose the model name.
Step 2
Click [Install].
To view the description of a program, click the [i] button.
When a checkbox is not selected, setup is not performed for the corresponding program.
Go to Roland DG Corporation Homepage

   Make sure the screen shown in the figure is displayed.

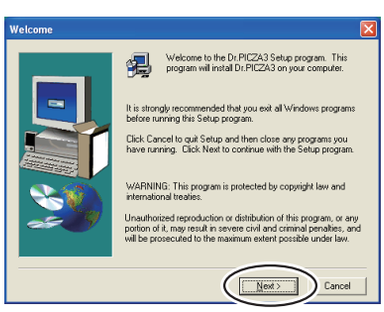
2. 
Roland Software Package
Roland
Roland Software Package
for PICZA, MODELA, CAMM-2, CAMM-3
LPX-1200
Install
Step 1
Click the drop-down arrow for [Click here.] and choose the model name.
Step 2
Click [Install].
To view the description of a program, click the [i] button. To view the manual, click the [?] button.
(There are manuals in PDF format for the programs that the [?] button references. Acrobat Reader is required
Go to Roland DG Corporation Homepage

   Follow the on-screen instructions to start installation and setup.

   Clicking the button starts installing.

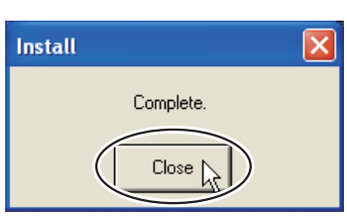
   Select [LPX-1200].

   Make sure that all the boxes be checked.

3. 
Welcome
Welcome to the Dr.PICZA3 Setup program. This program will install Dr.PICZA3 on your computer.
It is strongly recommended that you exit all Windows programs before running this Setup program.
Click Cancel to quit Setup and then close any programs you have running. Click Next to continue with the Setup program.
WARNING: This program is protected by copyright law and international treaties.
Unauthorized reproduction or distribution of this program, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under law.
Next >
Cancel

   When the screen shown in the figure appears, click "Next." Thereafter, follow the on-screen instructions.

   When all installation and setup finishes, the final window appears.

4. 

   Click [Close].

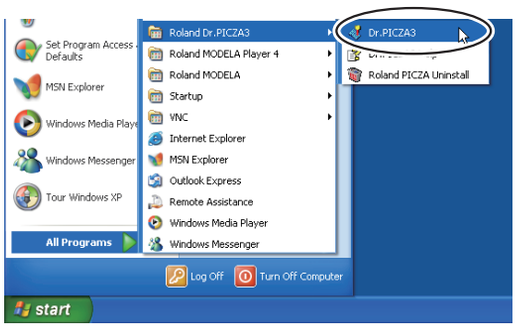
This completes the installation of the included software.

Making the Settings for Using Dr.PICZA3

You use the included Dr. PICZA3 program to make the settings that let you perform scanning with the machine.

Procedure

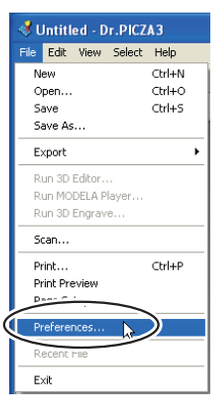
❶



Start Dr.PICZA3.

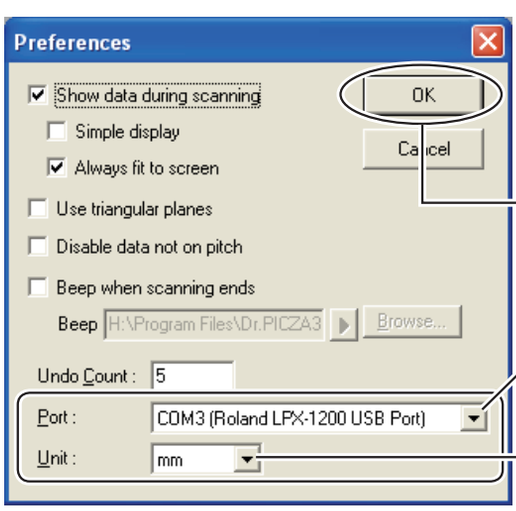
From the [Start] menu, choose [All programs (or Programs)], then [Roland Dr.PICZA3], then [Dr.PICZA3].

❷



Go to the [File] menu and click [Preferences].

❸



Make the setting for the communication port and the unit of measurement to use with Dr. PICZA3.

Click this after you complete making the setting.

Choose the number of the port labeled "(Roland LPX-1200 USB Port)."

Set [Unit] to either [mm] or [inch].

This completes all the preparations you need to make to perform scanning using the machine.

2. Creating 3D Data

This chapter describes how to create 3D data using the machine and the included Dr. PICZA3 program.

2-1 Task Flow

This machine can scan three-dimensional shapes using the included Dr. PICZA3 program. To make 3D data obtained by scanning available for use by other programs, you need to convert and save the data using Dr. PICZA3.
This section describes the sequence of operations from getting ready to scan through to saving the 3D data.

1. Prepare the object to be scanned and mount it on the machine.

Check whether the object you want to scan (we'll call this the "scan object") is suitable for scanning, and if so, mount it on the machine.

☞ See "2-2 Mounting the Scan Object."

2. Perform scanning.

Use Dr. PICZA3 to carry out scanning (basic scanning).

☞ See "2-3 Performing Scanning."

3. Finish the data.

After the basic scanning, you finish the data to the appropriate degree by performing additional scanning and creating polygon meshes as required.

☞ See "2-4 Finishing the Data."

4. Save the data.

Save the finished data in a file format compatible with the program you're using.

☞ See "2-5 Saving and Exporting Data."

Point

Using the included 3D Editor program lets you import directly and edit data scanned with Dr. PICZA3.

☞ See "3. Editing Scanning Results -- Using 3D Editor."

2-2 Mounting the Scan Object

First, you prepare the object to be scanned. After making sure the object is one that can be scanned, you mount the object on the machine.

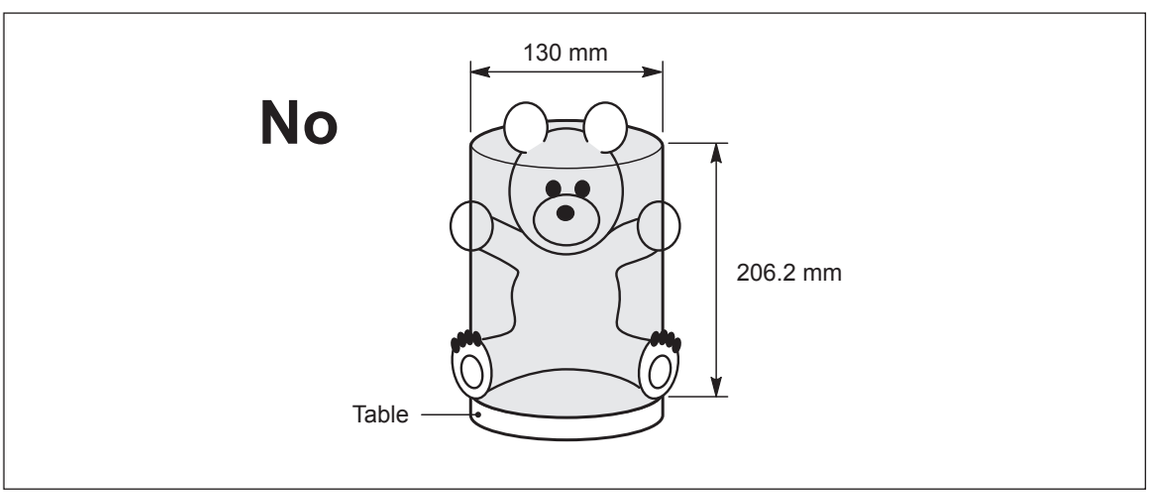
Preparing the Scan Object

This machine is not able to scan every possible kind of object. Some objects may be impossible to scan because of their composition or shape. Refer to the following and make sure the object to be scanned is one that can be scanned on this machine.

Object size

Never try to scan an object that protrudes beyond the table or whose size exceeds the scanning area.
Doing so may cause the machine to malfunction or damage the object to be scanned.

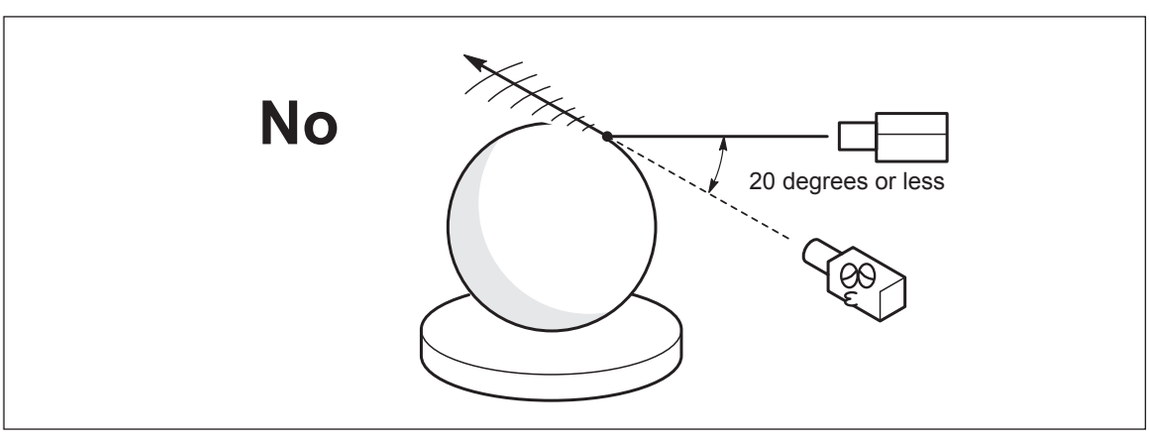
An object that protrudes beyond the table or whose height is too high cannot be scanned.



In such cases, consider separating the object into pieces whose individual sizes do not protrude beyond the area described above.

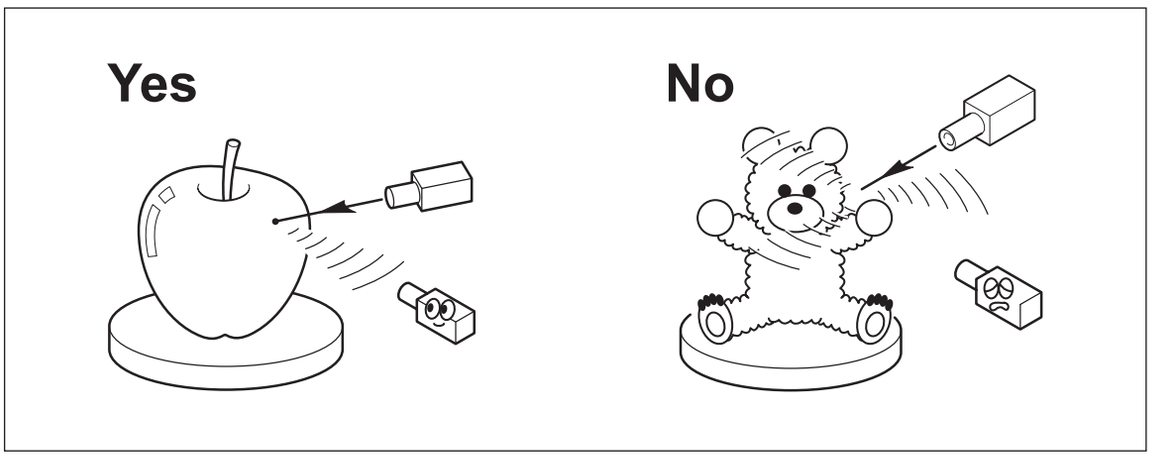
Object shape

Areas where the laser beam strikes at a shallow angle cannot be scanned.



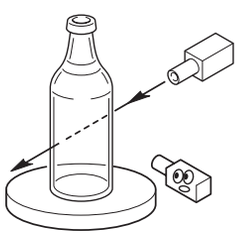
Object material

An object that has a comparatively smooth surface is suitable for scanning. Fabrics and objects that have a rough nap cannot be scanned.

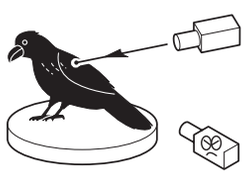


An object may be difficult to scan because of the type of material it is made of, or because of its color or other qualities.

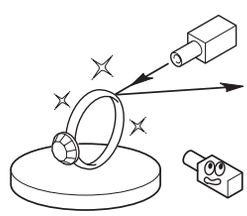
Yes	Objects that do not pass light
No	Clear or transparent objects



Yes	Brightly colored objects (White, yellow, red, etc.)
No	Dark-colored objects (black, blue, etc.)



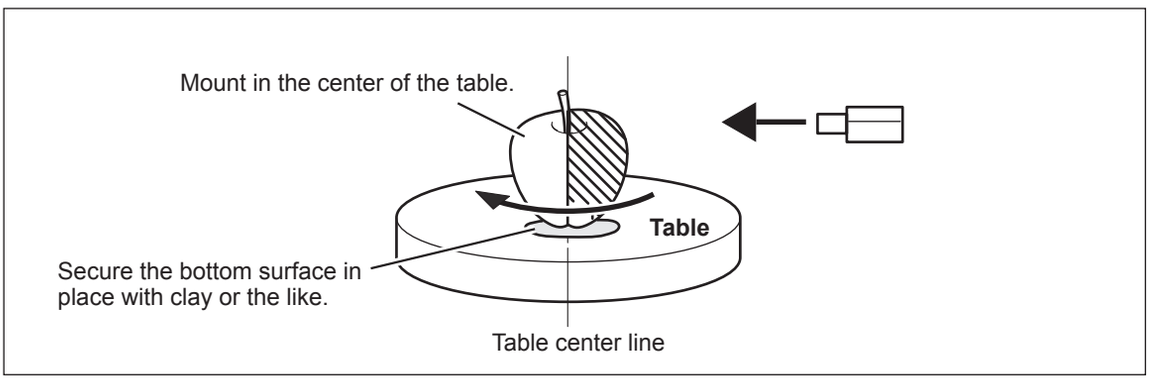
Yes	Objects of a nonglossy material (plaster, wood, or modeling clay etc.)
No	Glossy and highly reflective objects (metals, mirrors, etc.)



In such cases, applying a surface coat (primer coat) to the object may make scanning possible.
(*) Avoid highly reflective objects because of danger of eye injury.

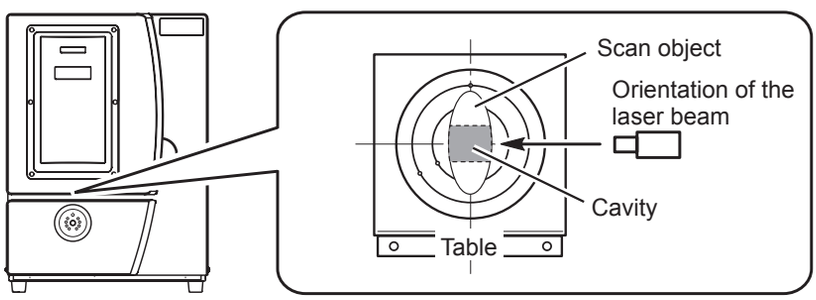
Mounting the Scan Object

Choose the object to be scanned, then mount the scan object.



The table rotates during scanning. Using double-sided tape, clay, or the like, fasten the object in place securely so that it will not fall over or slip. Any slipping of the object makes correct scanning impossible.

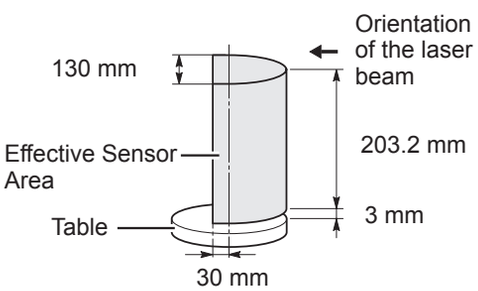
When the object to be scanned has areas with cavities or voids, mounting the object at an orientation that allows the laser beam to pass through the cavities, as shown in the figure, makes scanning easier.



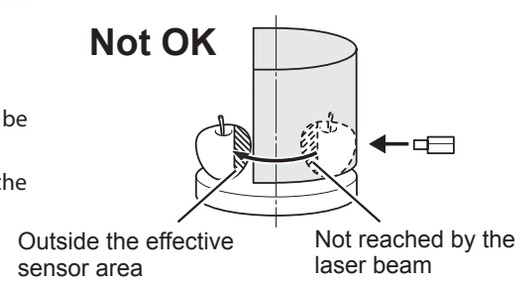
Point

Effective Sensor Area

The figure at right shows the area in which the machine's sensors detect the reflection of the laser beam, allowing the object to be scanned.
The surfaces that reflect laser light as the table rotates and the object passes through this area can be scanned.
When scanning an object that is considerably uneven, or that is crank-shaped, you may need to take this effective sensor area into account.



If the object is mounted at the edge of the table, it may not be possible to scan the entire object correctly.
In the case of the apple shown at right, the area enclosed by the shaded portion is not scanned.



2-3 Performing Scanning

Once you have mounted the object of the machine, you can now perform scanning.
Before you start scanning, make sure the door is closed and turn on the machine.

Basic Scanning

This is the scanning that you perform first after mounting the scan object. The scanning data obtained by executing basic scanning makes possible a wide variety of operations.

Procedure

1 Start Dr.PICZA3.

From the [Start] menu, choose [All programs (or Programs)], then [Roland Dr.PICZA3], then [Dr.PICZA3].

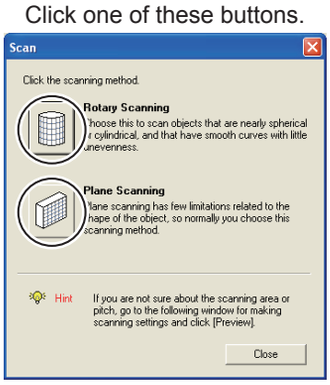
2

Click the [SCAN] button.

The [Scan] dialog box appears.

3

Click one of these buttons.


Scan
Click the scanning method.
Rotary Scanning
Choose this to scan objects that are nearly spherical / cylindrical, and that have smooth curves with little unevenness.
Plane Scanning
Plane scanning has few limitations related to the shape of the object, so normally you choose this scanning method.
Hint
If you are not sure about the scanning area or pitch, go to the following window for making scanning settings and click [Preview].
Close

Choose the scanning mode that matches the shape of the scan object.

The [Settings for Scanning] dialog box appears.

- Object whose shape is close to a sphere or cylinder
- Object with little unevenness

  Choose rotary scanning.

- Other object

  Choose plane scanning.

You normally choose plane scanning, which has little restrictions as to shape.

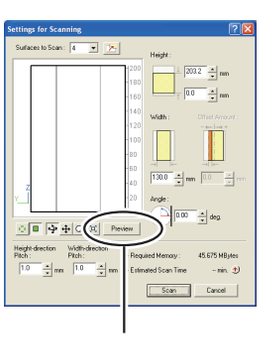
4 Click the [Preview] button.

The preview starts.

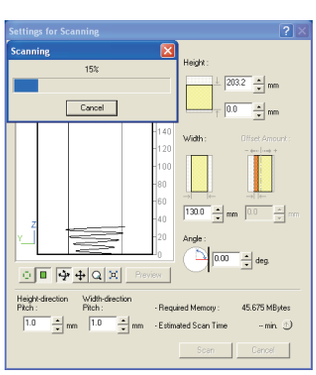
From this point on, never open the door until scanning ends. Doing so switches off the power. Scanning cannot be resumed when you then switch on the power again.

The height of the scanning area is setting automatically at this time.

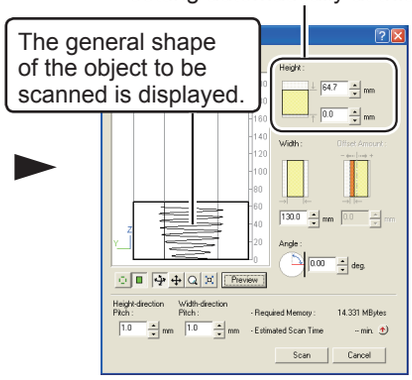
The general shape of the object to be scanned is displayed.



Click



Preview in progress



After preview has finished

❺ While viewing the preview, make the following settings, then start scanning.

Scanning pitch
Using a fine setting can reproduce details more accurately, but the amount of memory required increases, and scanning takes longer time.

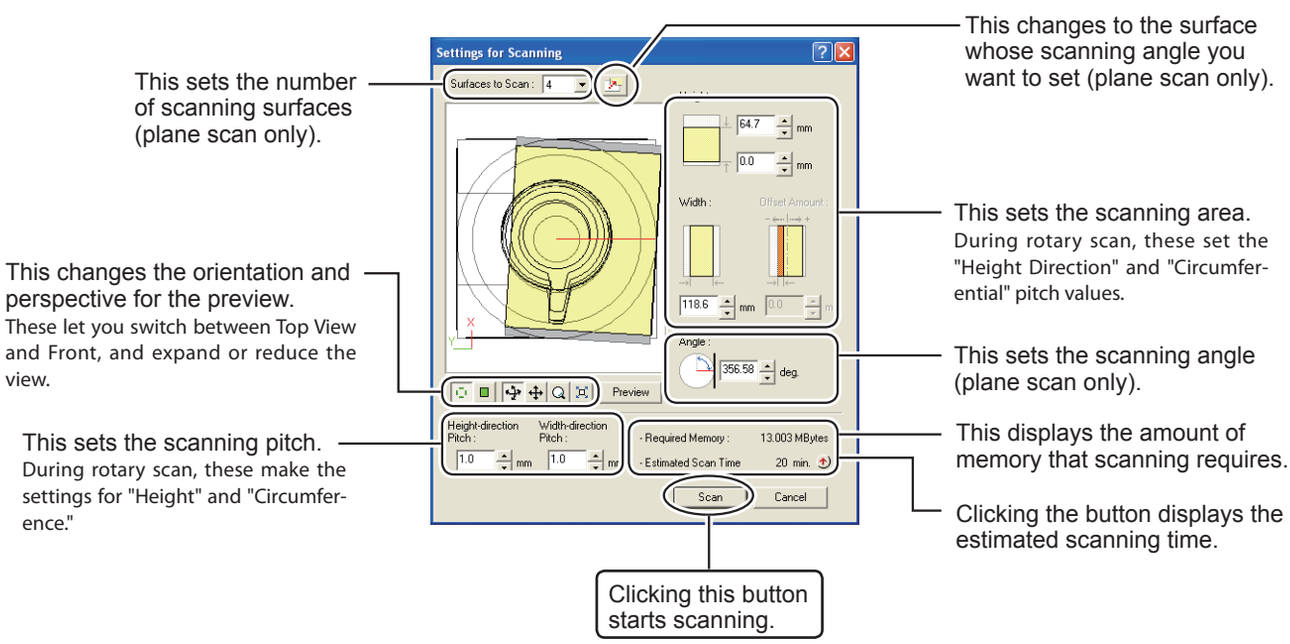
Scanning area
Specify the minimum area that allows the entire object to be scanned, thereby speeding up scanning time.

(The following settings are only for plane scanning.)

The number of scanning surfaces
You can specify from one to as many as six surfaces. It's a good idea to decide on the number of surfaces to match the shape of the object.

Scanning angle
Specify the incident angle of the laser for each surface. It may be a good idea to set the preview to Top View.

Setting screen for scanning (Plane Scan)


This changes to the surface whose scanning angle you want to set (plane scan only).
This sets the number of scanning surfaces (plane scan only).
This sets the scanning area.
During rotary scan, these set the "Height Direction" and "Circumferential" pitch values.
This changes the orientation and perspective for the preview.
These let you switch between Top View and Front, and expand or reduce the view.
This sets the scanning angle (plane scan only).
This sets the scanning pitch.
During rotary scan, these make the settings for "Height" and "Circumference."
This displays the amount of memory that scanning requires.
Clicking the button displays the estimated scanning time.
Clicking this button starts scanning.
Settings for Scanning
Surfaces to Scan : 4
Width :
Offset Amount :
Angle :
Preview
Height-direction Pitch :
Width-direction Pitch :
- Required Memory : 13.003 MBytes
- Estimated Scan Time 20 min.
Scan
Cancel

❻ When scanning ends, the results of scanning appear.

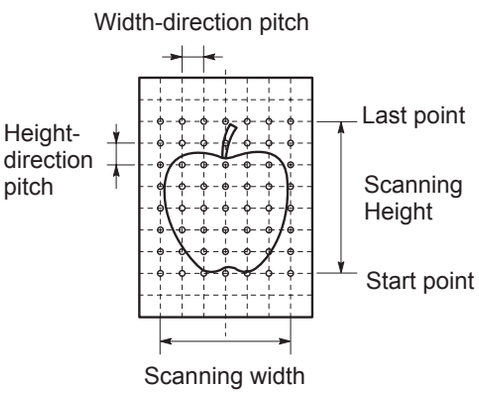
☞ Go to "2-3 Performing Scanning," see "Checking the Scanning Results."

Point

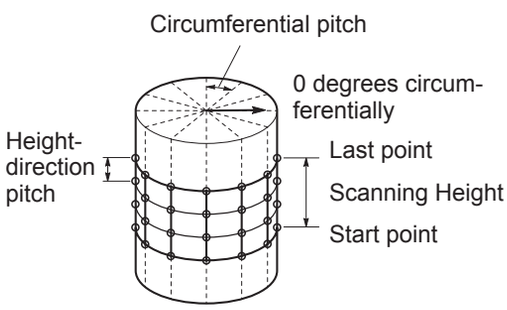
Scanning Pitch and Scanning Area

The methods for making the settings are different for plane scanning and rotary scanning.

Plane scan



Rotary scan



Required Memory

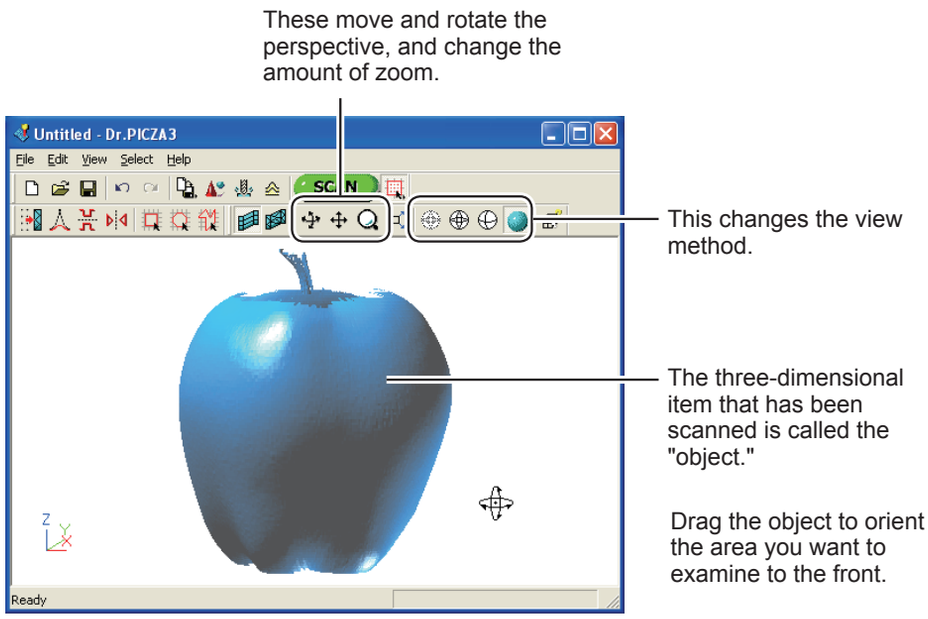
[Required Memory] at the lower right of the [Settings for Scanning] dialog box is automatically updated when you change the scanning area or scanning pitch. When this amount of memory exceeds the amount of free memory on the computer, performing scanning may result in extremely slow processing by the computer. We recommend making sure enough memory is installed in the computer when you are performing scans that use up large amounts of memory.

For reference:
Maximum memory use
(amount of memory used when scanning at maximum scanning area and minimum scanning pitch)

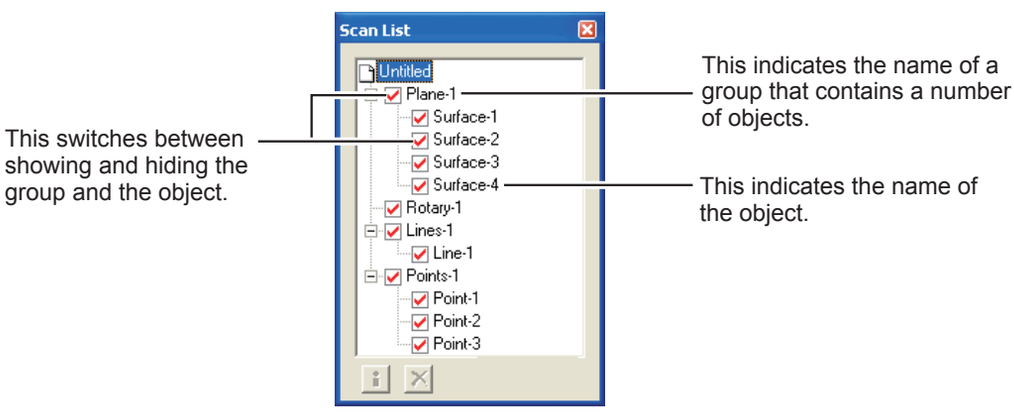
Plane scan: 1148 Mbyte (per surface)
Rotary scan: 1767 Mbyte

Checking the Scanning Results

You can examine the results of scanning while changing the view method and perspective. The Scan List displays a list of scanning data. For detailed information about this window, see the online help for Dr. PICZA3.


These move and rotate the perspective, and change the amount of zoom.
Untitled - Dr.PICZA3
File Edit View Select Help
This changes the view method.
The three-dimensional item that has been scanned is called the "object."
Drag the object to orient the area you want to examine to the front.
Ready

Dr.PICZA3 Window



Scan list

2-4 Finishing the Data

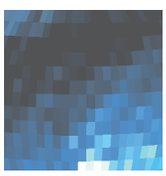
You take the data from basic scanning and modify it to produce finished data that has the form you want.

Selecting and Scanning a Specific Area

After the basic scanning, you can select specific areas and performing additional scanning (rescanning). The available types of rescanning are as follows.

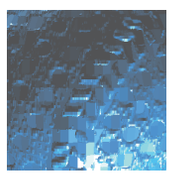
Rescan

You use rescanning when you want to increase the number of measuring points (scan points) and enhance the degree of completion of the 3D data.



Perform coarse scanning of the entire object.

Rescan required areas in detail.



You can reproduce detailed surface patterns.

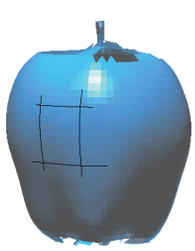
Even when holes are present...

...you rescan just these areas.

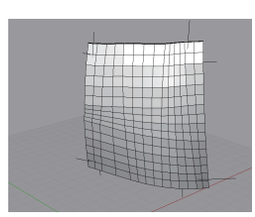
The holes are sealed, yielding the same shape as the original!

Line Scan/Point Scan

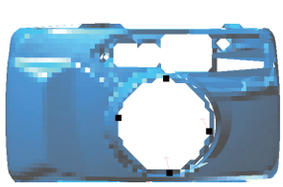
You use line scanning and point scanning when you want line-segment or point data to serve as supplemental data for three-dimensional modeling operations using CAD or computer-graphics programs.



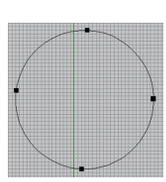
Perform line scanning with Dr. PICZA3...



...and re-create the curved surfaces with the 3D CAD program!



Perform point scanning with Dr. PICZA3...



...and re-create the curves with the 3D CAD program!

Point

Scanning Modes for Rescanning

You can choose the same scanning modes for rescanning and line scanning as you can for basic scanning.

- Scanning using plane scanning -- Plane rescan and plane line scan
- Scanning using rotary scanning -- Rotary rescan and rotary line scan

What follows is a general guide for using these selectively.

Rescan

• When you're rescanning areas that could not be scanned

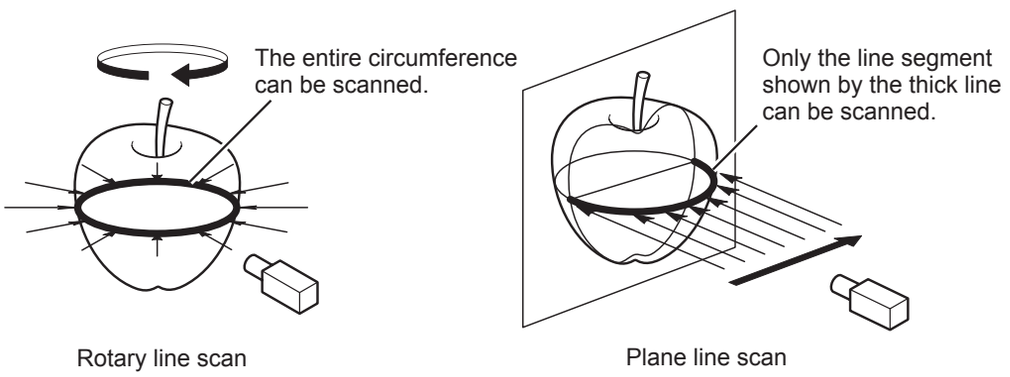
Normally you choose plane rescanning. When the scan object has a complex shape, it may be a good idea to use plane rescanning to perform overlapping scanning, changing the angle between each scanning pass.
Note, however, that rescanning is not effective in cases where the laser beam cannot reach the area from any angle.

• When you're rescanning a specific area at a fine scanning pitch

It may be a good idea to perform rescanning in the same mode you used for the basic scanning.
When you want to perform fine-detail scanning of the surface pattern of a scan object whose shape is cylindrical or close to cylindrical, you first perform coarse rotary scanning, then choose rotary rescanning.

Line Scan

Normally you choose the same mode you used for basic scanning. However, when you want to scan line segments that wrap around to the back of the object, you choose rotary line scanning. Plane line scanning can scan only line segments on the surface visible in the window.



Rotary line scan　　Plane line scan

To Use the Data with a 3D CAD Program or the Like

To use line-segment and point data as supplementary data for a 3D CAD program, you may need to export the data and convert the file.

☞ See "2-5 Saving and Exporting Data."

Procedure

You perform rescanning using the following procedure. The screens shown are those for plane rescanning.

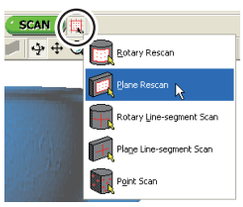
1 First, scan the entire object.

Choose a scanning mode according to the shape of the scan object.

From this point on, never open the door until rescanning ends. Doing so switches off the power. Scanning cannot be resumed when you then switch on the power again.

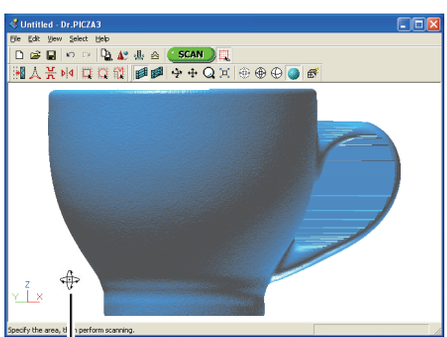
> **Point**
>
> You can speed up operations during basic scanning by scanning at a coarse pitch. For line scanning and point scanning in particular, it is a good idea to scan at the minimum pitch necessary to get the general shape.

2



When the scan of the entire object finished, click the [ ] button to choose the method you want to use for rescanning.

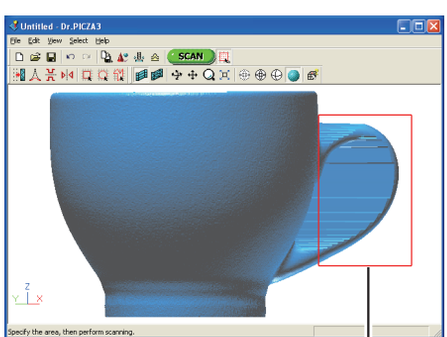
3



SPACE key + drag left or right to shift the perspective.

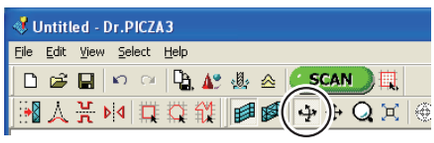
Drag to specify the rescanning area.

You can specify more than one rescanning area.

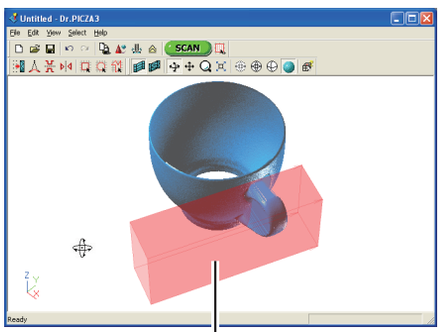


Drag to specify the rescanning area.

> **Point**
>
> **Shortcut Keys for Shifting the Perspective**
>
> - To Rotate the Object
>   Hold down the SPACE key and drag
> - To Move the Object
>   Hold down the Ctrl key and drag
> - To expand and reduce the Object
>   Hold down the shift key and drag
>
> In addition to these shortcuts, you can also shift the perspective using the arrow keys. For detailed information, refer to the online help for Dr.PICZA3.

4 

Click the [ ] button.
The mode for specifying the rescanning area is canceled.

5 

Specified rescanning area

Drag to verify the area to rescan.
The specified rescanning area is displayed as a three-dimensional form.

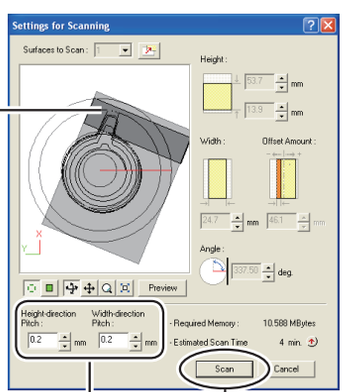
Point

When you want to respecify the rescanning area, click the object at any location to release the area already specified.

6

Click the [SCAN] button.
The [Settings for Scanning] dialog box appears.

7 Rescanning area



These set scanning pitch.

This executes rescanning.

If necessary, change the scanning pitch, then click [Scan].
Here, none of the settings except for the scanning pitch can be changed. It is also not possible to set a different scanning pitch for each area.

Point

Setting the Scanning Pitch

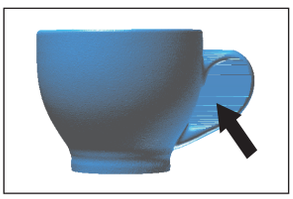
When performing rescanning, make the setting for the scanning pitch as fine as possible. This increases the number of scanning points, enhancing the degree of completion. When little free memory is available, it may be a good idea to use a narrow scanning area and perform rescanning in several passes.

You can perform rescanning as many times as you like after basic scanning. Also, when you want to redo scanning after checking the scanning results, you can go back to the previous state before rescanning by clicking the [ ] button.

For detailed information on rescanning methods, refer to the online help for Dr. PICZA3.

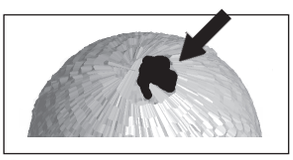
Creating New Polygons

You can create new polygons using all the scanning points, including the data produced by rescanning. These polygons are called a "polygon mesh." Creating a polygon mesh can make it possible for you to reproduce cavities and voids in the object and fill in holes according to the surrounding shape.

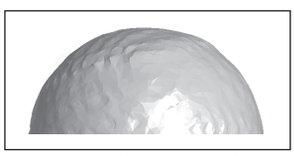


Creating a polygon mesh for area of connected voids...

...deletes surfaces, reproducing the void area of the original!



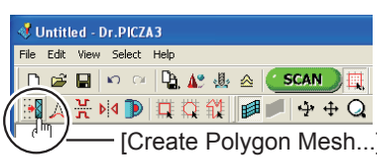
Creating a polygon mesh when a hole has occurred...



...lets you fill in the hole simply and easily!

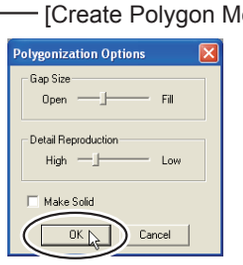
A polygon mesh is composed of polygons created by estimating the original shape of the scan object from the scanning points. They differ from the polygons displayed immediately after scanning, which are generated simply by connecting the scanning points.

Procedure

❶ 

[Create Polygon Mesh...] button

Click the [Create Polygon Mesh...] button.
The [Polygonization Options] dialog box appears.

❷ 

Select the parameters for creating a polygon mesh, then click [OK].
For detailed information on the [Polygonization Options] dialog box, refer to the online help for Dr. PICZA3.

❸ If the polygon mesh is not what was intended, change the parameters and create it again.

Point

Tips for Creating a Polygon Mesh

To create a polygon mesh having a high degree of completion, you may need to scan at as fine a pitch as possible in order to increase the number of scanning points. In particular, cases like those described below may yield a polygon mesh having a configuration that is not what you intended.

- When there is a small number of scanning points with respect to undulations in the scan object
- When areas with holes are too big or the shape of them is complex

In such cases, rescan just that area at a fine pitch. When little memory is available on the computer, it may be a good idea to divide the area into parts and repeat rescanning several times to increase the number of scanning points sufficiently, and then create the polygon mesh.

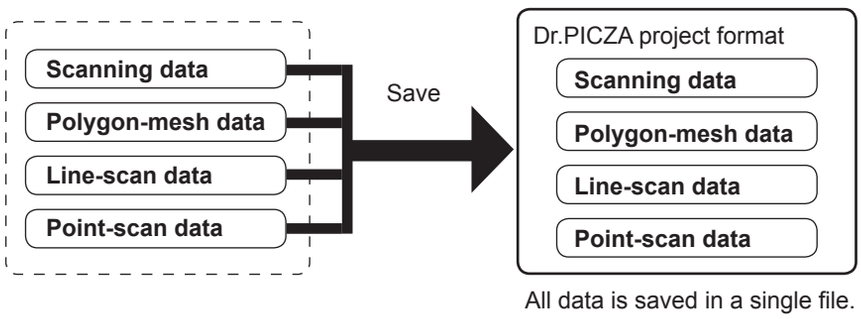
☞ Go to "2-4 Finishing Data," see "Selecting and Scanning a Specific Area."

2-5 Saving and Exporting Data

You can take data obtained by scanning and creating polygon meshes and save it in a file format compatible with Dr. PICZA3.
You can also convert (export) data and save it in a file format allowing import into other programs.

Saving Data

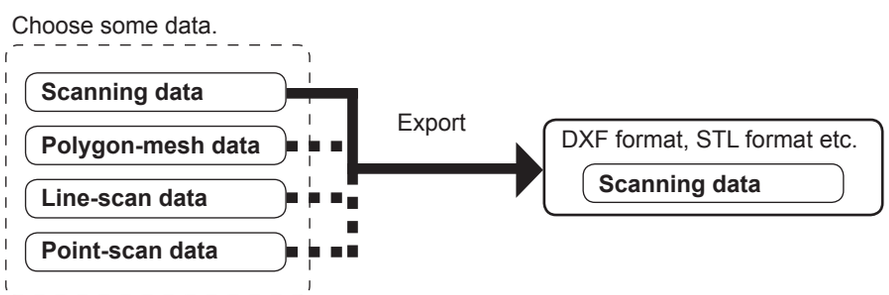
Go to the [File] menu and click [Save As]. The data is saved in Dr. PICZA project format (with the file extension .pij).
In addition to working with saved files with Dr. PICZA3, you can edit them using 3D Editor, an editing program for 3D data.



All data is saved in a single file.

Exporting Data

When you want to take data obtained by scanning and make use it with a 3D CAD program or other such program, you export the data.

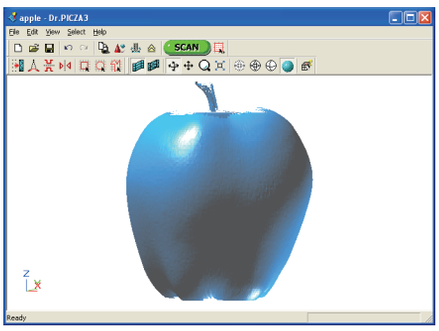


Point

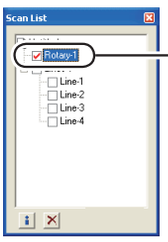
About Exportable Data

Scanning data is data for measuring points (scanning points) obtained by scanning.
Polygon-mesh data is data composed of new polygons created by estimating the proper shape of the scan object from the scanning data.
Line-scan data and point scan data are measuring-point data newly obtained respectively by line scanning and point scanning.
However, the exportable file formats for each type of data are predetermined.
For detailed information, refer to the online help for Dr. PICZA3.

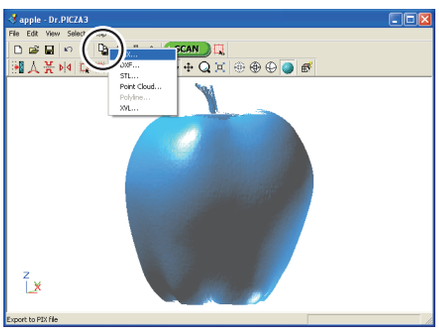
Procedure

1. 

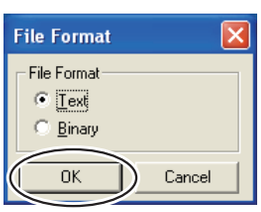
At the Scan List, choose just the data you want to export and display the window.



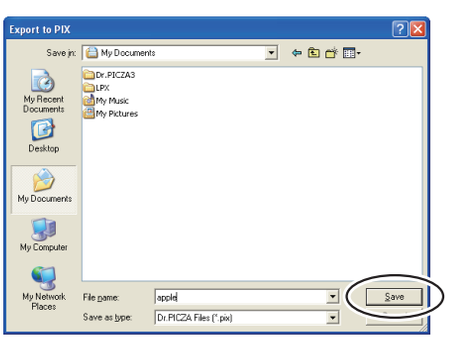
Check the box of the object you want to export.

2. 

Click the [ ] button. Click the file format you want to use for exporting.

3. 

Depending on the file format you clicked, a dialog box may appear. Choose a selection supported by the program with which you want to share the data, then click [OK].

4. 

Type in the name of the file to export, then click [Save].

3. Editing Scanning Results - Using 3D Editor

This chapter describes the basic methods of operation for 3D Editor, the 3D-data editing program included with the machine.

3-1 What You Can Do Using 3D Editor

3D Editor lets you do things like the following.

Enlarge and reduce	Deforming operations such as stretching in one direction are also possible.
Move and rotate	Specifying numerical values for the movement distance and angle of rotation is also possible.
Sever	You can divide an object into parts. Filling cut surfaces is also possible.
Delete	You can delete unneeded objects.
Merge	You can unite a number of objects. There is even an alignment feature for doing this.
Reduce the number of polygons	This reduces the amount of data while keeping detail.
Smoothing feature	This smooths the surfaces of objects.
Export	Data can be saved in a wide variety of file formats.
Repolygonization	This creates a polygon mesh by using imported data.

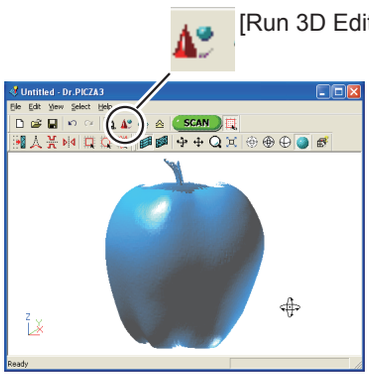
For detailed information on the features of 3D Editor, refer to the online help for 3D Editor.
Note that 3D Editor can only work with surface models.

3-2 Importing and Exporting Data

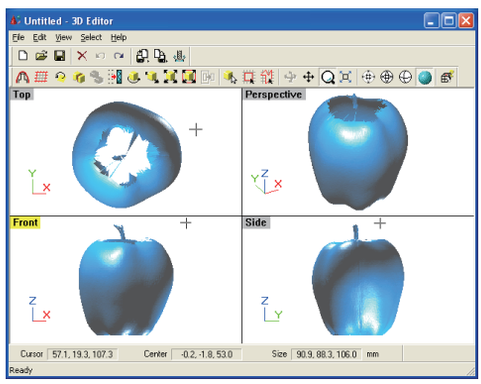
This section describes how to import and export data using 3D Editor.

Importing Scanning Results Immediately

In Dr. PICZA3, clicking the [Run 3D Editor] button starts 3D Editor and simultaneously imports the displayed scanning results.



Dr.PICZA3



3D Editor starts and data is imported.

Importing and Exporting

Clicking the [Import] button lets you import files in Dr. PICZA project format, DXF format, and so on.
Clicking the [Export] button lets you save data in a wide variety of file formats that are useful for creating 3D CAD data and 3D computer graphics.

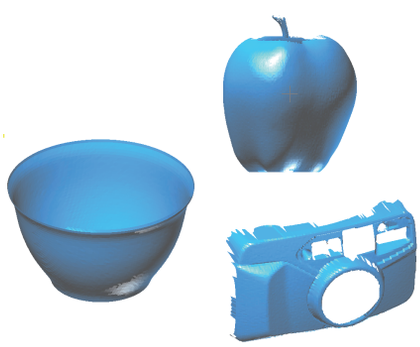
[Import] button [Export] button

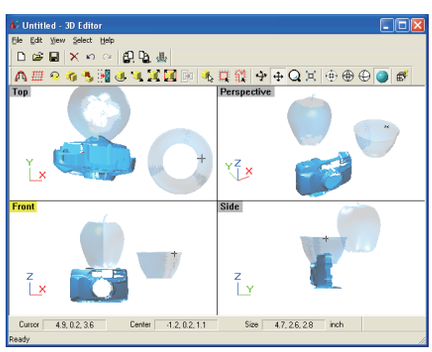
Point

3D Editor also supports importing for PIX-format files from Dr. PICZA versions 1 through 2.

Importing More Than One Set of Data

You can use the [Import] button to import more than one set of data and place a number of objects in the 3D Editor window.





3-3 Basic Operations for Objects

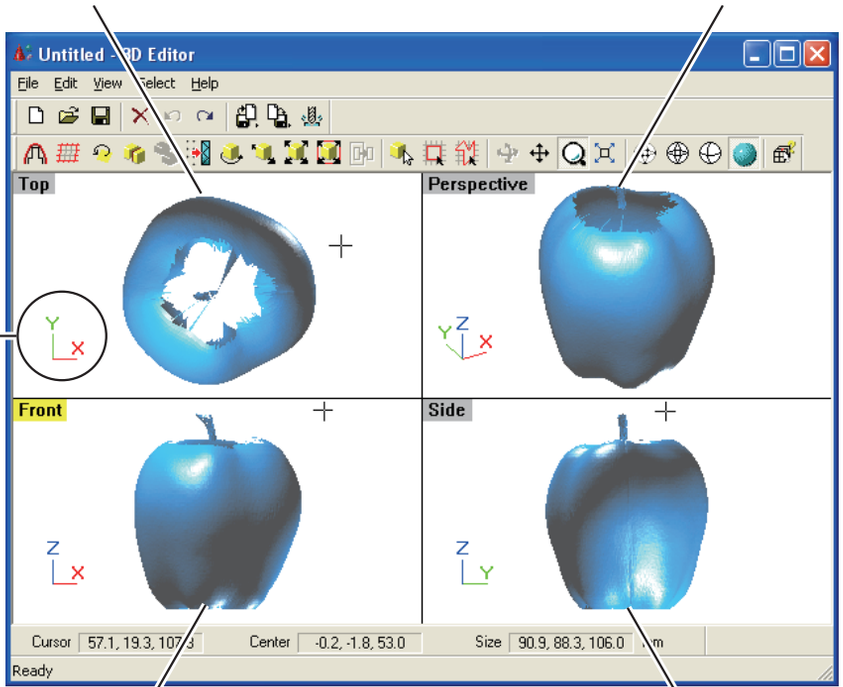
This section describes the windows in 3D Editor and how to perform simple editing using the program.

How to View the 3D Editor Window

The 3D Editor window is composed of panels that display the object from four different perspectives at the same time. You can carry out editing tasks using any one of these views.

Top
This is a view of the object seen from directly above. You use it at times such as when you want to move only in the X or Y direction. Z-direction movement is not possible.

Perspective
You use this when you want to view the overall shape. You can move in all three directions (X, Y, and Z), but it does not let you gauge the direction or distance of such movement with any accuracy.

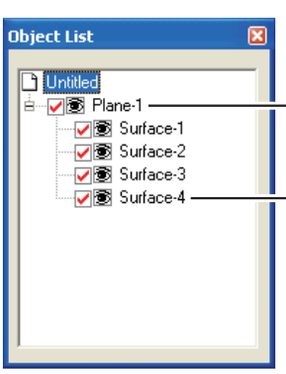


This indicates the X, Y, and Z orientation.

Front
This is a view of the object seen from directly in front. You use it at times such as when you want to move only in the X or Z direction. Y-direction movement is not possible.

Side
This is a view of the object seen directly from the side. You use it at times such as when you want to move only in the Y or Z direction. X-direction movement is not possible.

Imported objects appear in the Object List. You can perform tasks such as displaying only the objects you want to view and deleting unneeded objects.



Group name
This is a collection of multiple objects.

Object name

Object List

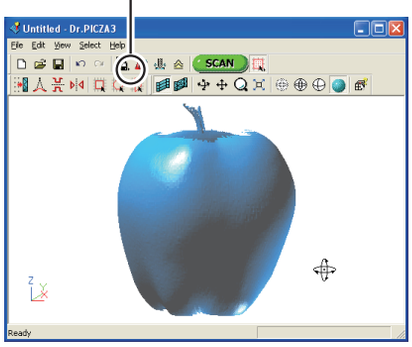
Let's Try Editing Data with 3D Editor

Let's try some simple editing. We'll scan an apple with the machine, then try cutting and moving it. The explanations in this section begin at the point where you have scanned an apple using Dr. PICZA3.

Procedure

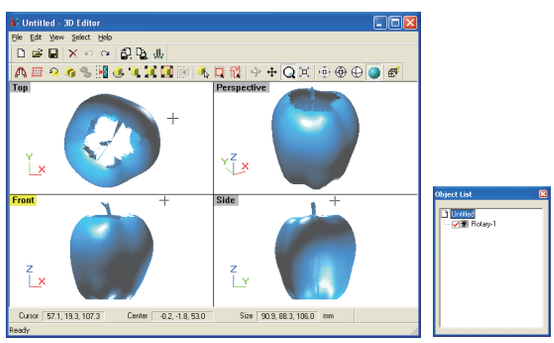
❶ Start 3D Editor.

Click the [Run 3D Editor] button.



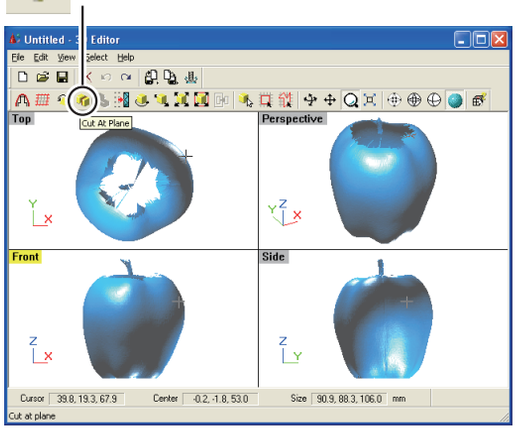
Dr.PICZA3 Window

3D Editor starts.
The scanning data for the apple
is imported at the same time.

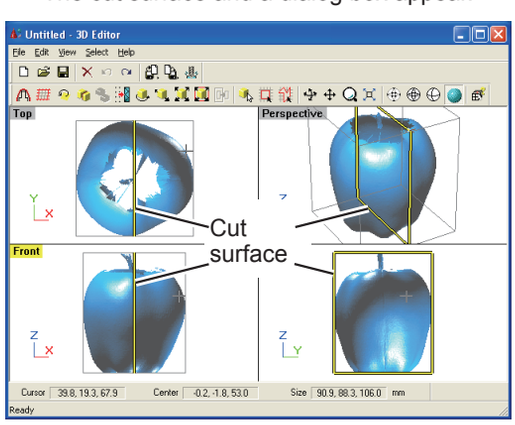


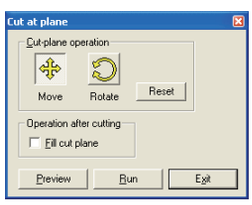
❷ Try cutting the apple vertically. First, do the preparation.

Click the [Cut at Plane] button.



The cut surface and a dialog box appear.

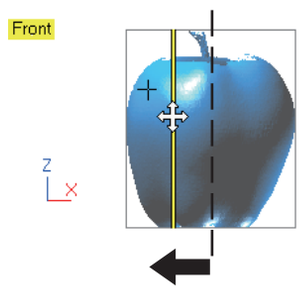




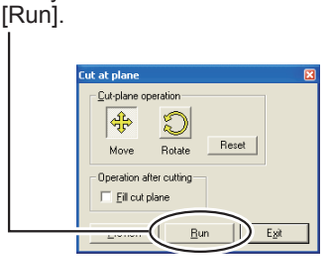
Dialog box

❸ Using the [Front] window, let's try shifting the cut surface to the left, then carry out cutting.

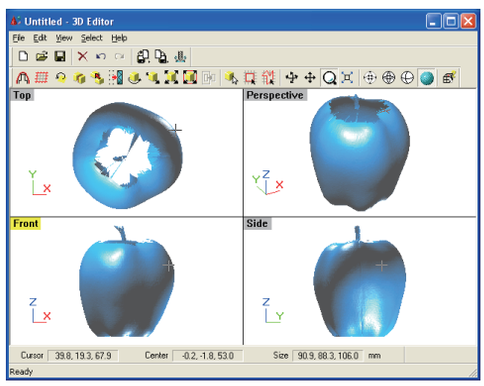
❶ Drag the cut surface to move it to the left.

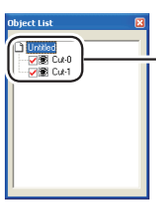


❷ When you have decided on the cut location, click [Run].



The apple is divided into two parts. However, its still looks like a single object.



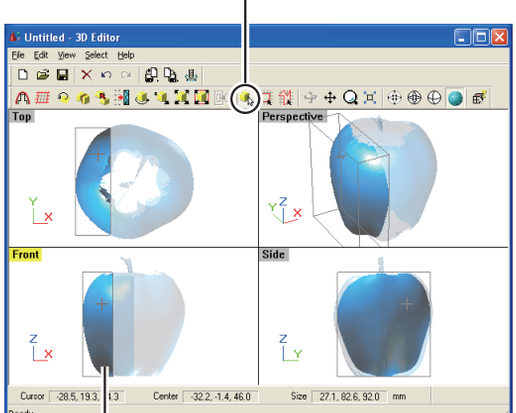


New objects with names like [Cut-0] and [Cut-1] appear in the Object List.

❹ Let's try separating the two objects.

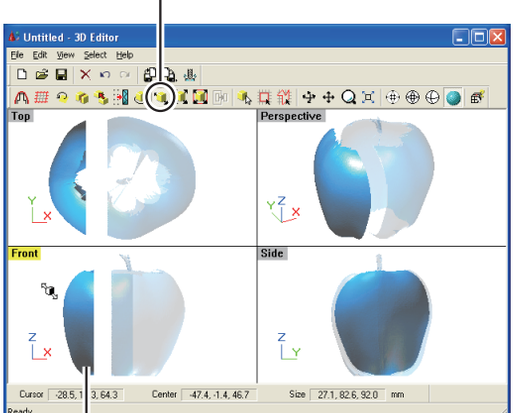
When you're done with the operation, right-click to quit the [Move Object] mode.

❶ Click the [Select Object] button.



❷ Click the left part of the apple to select it.

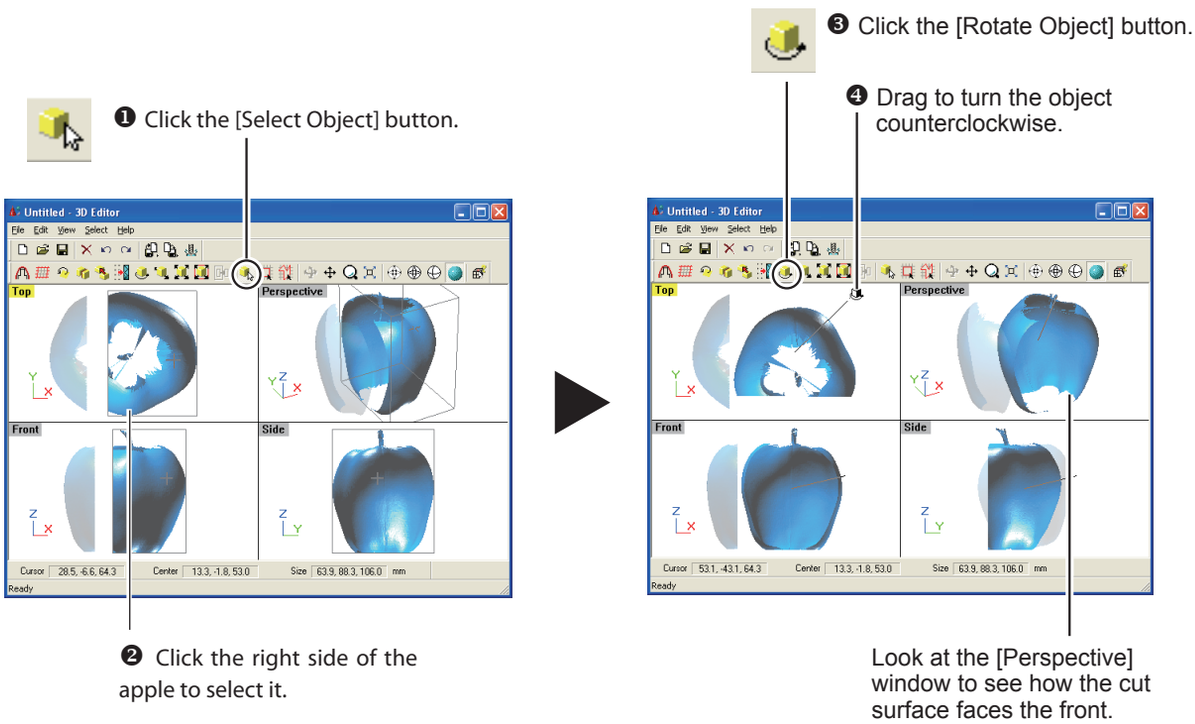
❸ Click the [Move Object] button.



❹ Drag the portion you selected to the left.

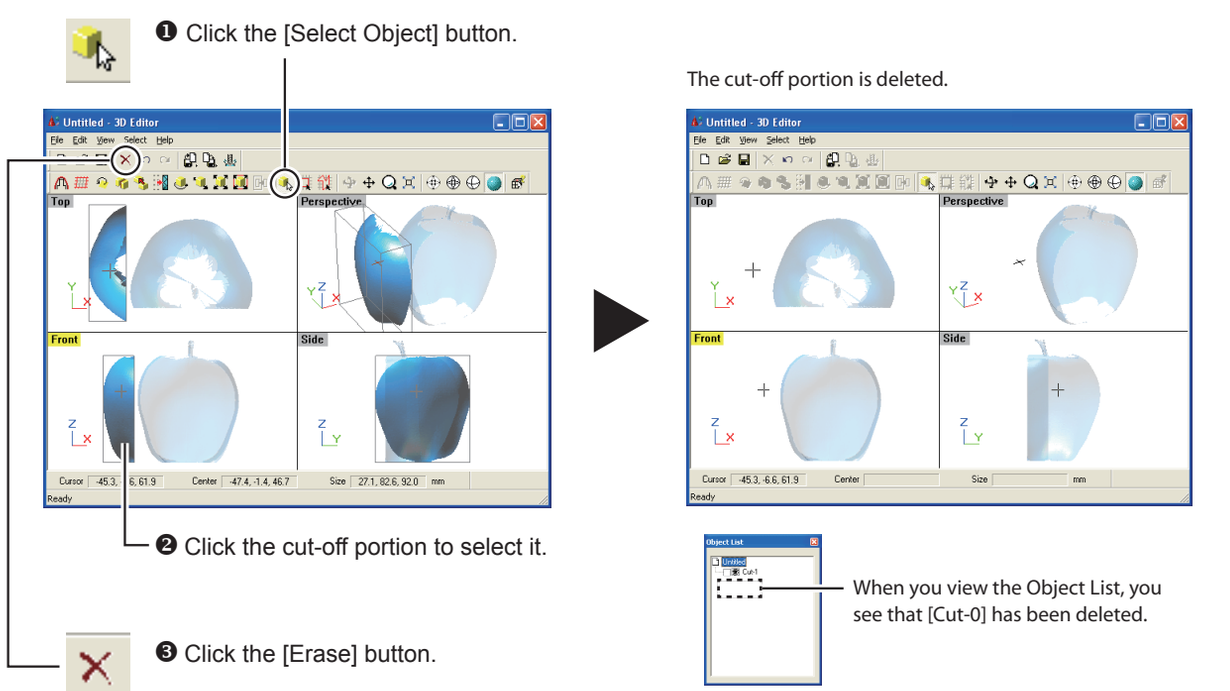
❺ Now try orienting the cut surface of the apple on the right to face the front.
You can only do this when you're in the [Top] window.

When you're done with the operation, right-click to quit the [Move Object] mode.


❸ Click the [Rotate Object] button.
❹ Drag to turn the object counterclockwise.
❶ Click the [Select Object] button.
❷ Click the right side of the apple to select it.
Look at the [Perspective] window to see how the cut surface faces the front.

❻ Finally, let's try deleting the cut-off object.

This operation can be carried out from any perspective except [Side].


❶ Click the [Select Object] button.
The cut-off portion is deleted.
❷ Click the cut-off portion to select it.
❸ Click the [Erase] button.
When you view the Object List, you see that [Cut-0] has been deleted.

4. What to Do If...

This section describes how to resolve problems that can occur during operation, and what is required when moving the machine to a different location.

4-1 What to Do If...

The machine doesn't run.

■ The machine doesn't power up.

Are the AC adapter and the power cord connected correctly?

- Connect the AC adapter and power cord securely so that they do not come loose.
- Unplug the AC adapter from the electrical outlet, then plug it in again.

Is the door open?
Close the door. The power does not come on while the door is open.

■ The power can't be switched off.

Is a foreign object caught in the interlock switch?
Remove the foreign object.

Scanning is impossible.

■ The power button illuminates or flashes red.

Is the head retainer still attached?
Be sure to remove the head retainer before you turn on the power.

Is anything placed on some internal location other than the table?
Remove whatever has been placed.

■ The power button illuminates red and blue.

Open the door, then close the door and turn on the machine again.

■ The power button flashes red and blue.

Is the cable connected?
Connect the cable securely.

Are you using a lengthy connector cable or a USB hub?
Use a shielded USB cable having a length of three meters or less. Never use a USB hub or the like.

- About the illumination pattern of the power button

☞ Go to "Names and Functions," see "About the Indicator Lights."

■ The message "Cannot communicate with present scanner" appears on the computer.

Is the number for the communication port set correctly?
In Dr. PICZA3, go to [Preferences] and make sure the number for the communication port is set correctly.

☞ See "1-3 Installing and Setting Up the Software."

■ The message "COM:** not ready" appears on the computer.

Is the machine powered up?
Be sure to turn on the machine before you run Dr. PICZA3.

Is the number for the communication port set correctly?
In Dr. PICZA3, go to [Preferences] and make sure the number for the communication port is set correctly.

Are you using a lengthy connector cable or a USB hub?
Use a shielded USB cable having a length of three meters or less. Never use a USB hub or the like.

After you have checked the matters just described, if scanning is still not possible, then take action as follows.

1. Switch off the power.
2. Unplug the AC adapter from the electrical outlet, then plug it in again.
3. Restart the computer.
4. Switch on the power.

Other Symptoms

■ Scanning ended, but the computer then stopped.

Does the computer have enough memory?
Go to Dr. PICZA3's [Settings for Scanning] dialog box and check how much memory is required, then increase the scanning pitch. Alternatively, consider installing more memory. When scanning exceeds the amount of free memory on the computer, the operation of the computer may become very slow.

■ The message "Can't find MODELA Player" or "Can't find 3D Engrave" appears on the computer.

The buttons for running these do not function on this system. They become available when you are using it together with the MODELA series or the like.

■ Uninstalling the driver

Remove [Roland LPX-1200 USB Device] from the list of [Add or Remove Programs] (or [Add/Remove Programs]).

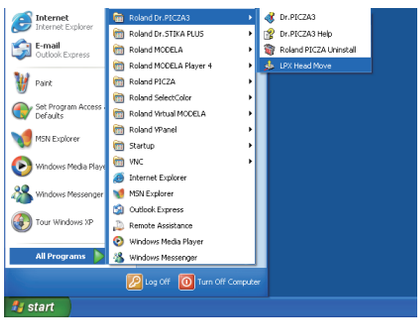
☞ Go to "1-3 Installing and Setting Up the Software," see "What to Do If Installation Is Impossible."

4-2 When Moving the Machine

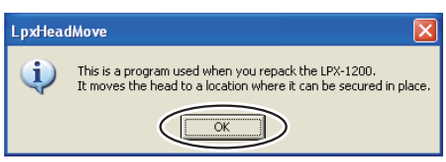
When you move the machine to another location, you use the head retainer to secure the head in place, then repack the machine. To install the head retainer, you must use the included LPX Head Move program to move the head to the location where it can be secured in place.

Procedure

1. Make sure that the machine connects to the computer and the door is closed, then turn on the machine.

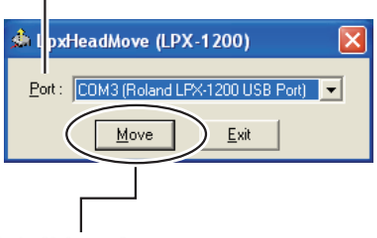
2. 

   Start LPX Head Move.
   From the [Start] menu, choose [All programs (or Programs)], then [Roland Dr.PICZA3], then [LPX Head Move].

3. 
LpxHeadMove
This is a program used when you repack the LPX-1200.
It moves the head to a location where it can be secured in place.
OK

   When the screen in the figure appears, click [OK].

4. Choose the number of the port labeled "(Roland LPX-1200 USB Port)."



5. Click [Move].
   The head automatically moves to the location where it can be secured in place.

6.

   When the screen in the figure appears, click [OK].
   Head movement ends.

After you have finished the operation just described, install the head retainer and repack the machine.

☞ Go to "1-2 Installing," see "Removing the Protective Material."

5. Appendix

5-1 Specifications

Machine Specifications

	LPX-1200
Table size	Diameter 130 mm (10 in.)
Maximum scanning area	Plane scanning: Width 130 mm (5 in.), height 203.2 mm (8 in.) Rotary scanning: Diameter 130 mm (5 in.), height 203.2 mm (8 in.)
Scanning pitch	Plane scanning: width direction 0.1 to 130 mm, height direction 0.1 to 203.2 mm Rotary scanning: circumference 0.18 to 3.6 degrees, height direction 0.1 to 203.2 mm
Repeat accuracy	±0.05 mm (This figure reflects standard scanning conditions established by Roland DG.)
Maximum table load weight	5 kg
Laser	Wavelength: 645 to 660 nm Maximum output: less than 390 µW (maximum output of the laser light emitted inside housing is 5 mW)
Sensor	Noncontact laser sensor
Scanning method	Spot-beam triangulation
Operating speed	Table rotation speed: 9 rpm, head rotation speed: 4.48 rpm, maximum head movement speed: 7.58 mm/sec.
Interface	USB interface (compliant with Universal Serial Bus Specification Revision 1.1)
Power requirements	Dedicated AC adapter: AC 100 to 240 V ±10% 50/60 Hz Machine: DC 19 V, 2.1 A
Power consumption	Approx. 20 W (including AC adapter)
Dimensions	443 [W] x 396 [D] x 609 [H] mm (17-7/16 [W] x 15- 9/16 [D] x 24 [H] in.)
Weight	35 kg
Packed dimensions	620 [W] x 550 [D] x 810 [H] mm (24-1/2 [W] x 21- 5/8 [D] x 31-7/8 [H] in.)
Packed weight	43 kg
Environment	Temperature: 10 to 40ºC (50 to 104ºF) (25ºC [77ºF] or more recommended) Humidity: 35 to 80% (no condensation)
Included items	AC adapter, power cord, CD-ROM, clay, user's manual, Roland LPX EZ Studio

System Requirements for the Software

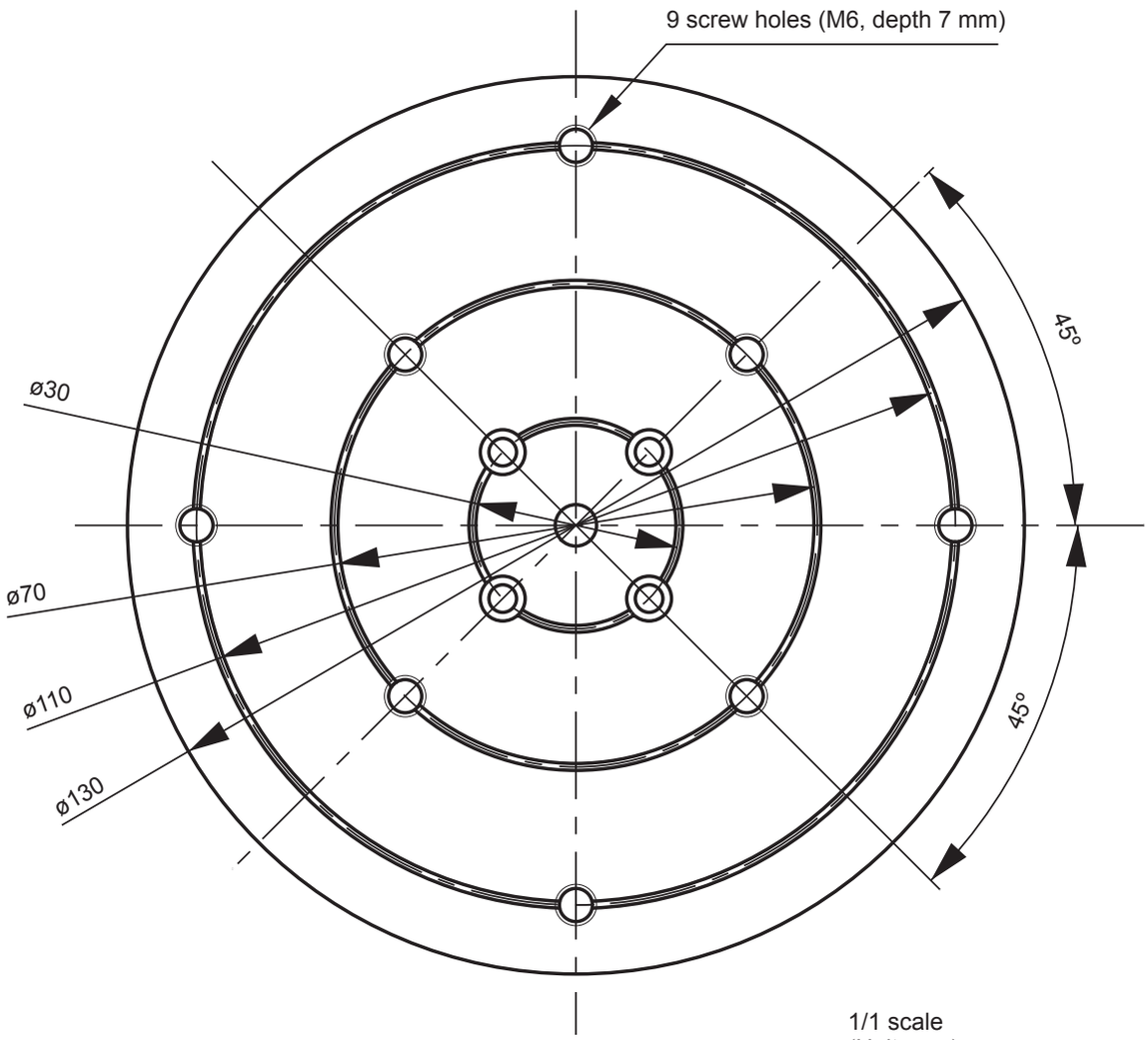
Operating system	Windows XP/2000/Me/98
CPU	Pentium II or higher
Memory	128 MB or more
Free hard-disk space required for installation	Dr.PICZA3: 20 MB or more 3D Editor: 10 MB or more

System Requirements for USB Connection

Operating system	Windows XP/2000/Me/98 (Windows 95 and Windows NT4.0 are not supported.)
Computer	1) Computers preinstalled with Windows 98/Me/2000/XP at the time of purchase (This includes such computers later upgraded to Windows Me/2000/XP.) 2) Computers on which USB operation is assured by the manufacturer of computers

- Whether a USB connection is possible depends on the specifications of the computer. To determine whether the computer you're using is capable of correct USB operation, check with the manufacturer of the computer.
- Use a shielded USB cable having a length of three meters or less. Do not use a USB hub or the like.

5-2 Table Dimensional Drawing



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